

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

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| Seq ID No.: | Seq | Modification | |-------------|--------------------------|--------------| | 8 | 5'-CCTACTAGCGTTCTCATC-3' | (133-1) | | 9 | 5'-CCTACTAGCXTTCTCATC-3' | (139-2) | | 10 | 5'-CCTACTAXCGTTCTCATC-3' | (133-2) | | 11 | 5'-CCTACTXGCGTTCTCATC-3' | (139-3) | | 12 | 5'-CCTACXAGCGTTCTCATC-3' | (133-3) | | 13 | 5'-CCTAXTAGCGTTCTCATC-3' | (139-4) | | 14 | 5'-CCTXCTAGCGTTCTCATC-3' | (133-4) | | 15 | 5'-CCTXCTAGCCTTCTCATC-3' | (145-10a) | | 16 | 5'-CCTACTAGCGXTCTCATC-3' | (133-5) | | 17 | 5'-CCTACTAGCGTXCTCATC-3' | (139-7) | | 18 | 5'-CCTACTAGCGTTXTCATC-3' | (133-6) | | 19 | 5'-CCTACTAGCGTTCXCATC-3' | (139-8) | | 20 | 5'-CCTXXTAGCGTTCTCATC-3' | (133-12) | | 21 | 5'-XXTAGCGTTCTCATC-3' | (139-6) | | 22 | 5'-CCTACTAGCGTTCXXATC-3' | (139-9) | | 23 | 5'-CCTXCTXGCGTTCTCATC-3' | (145-10b) |

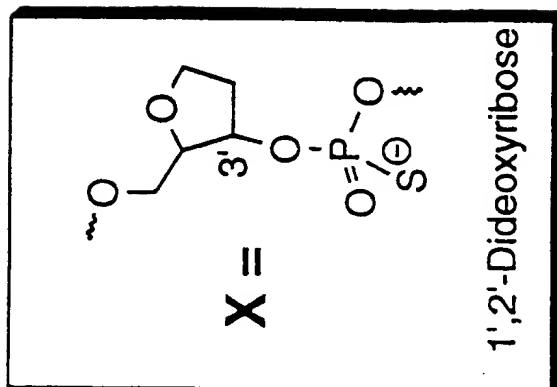


FIG. 1A

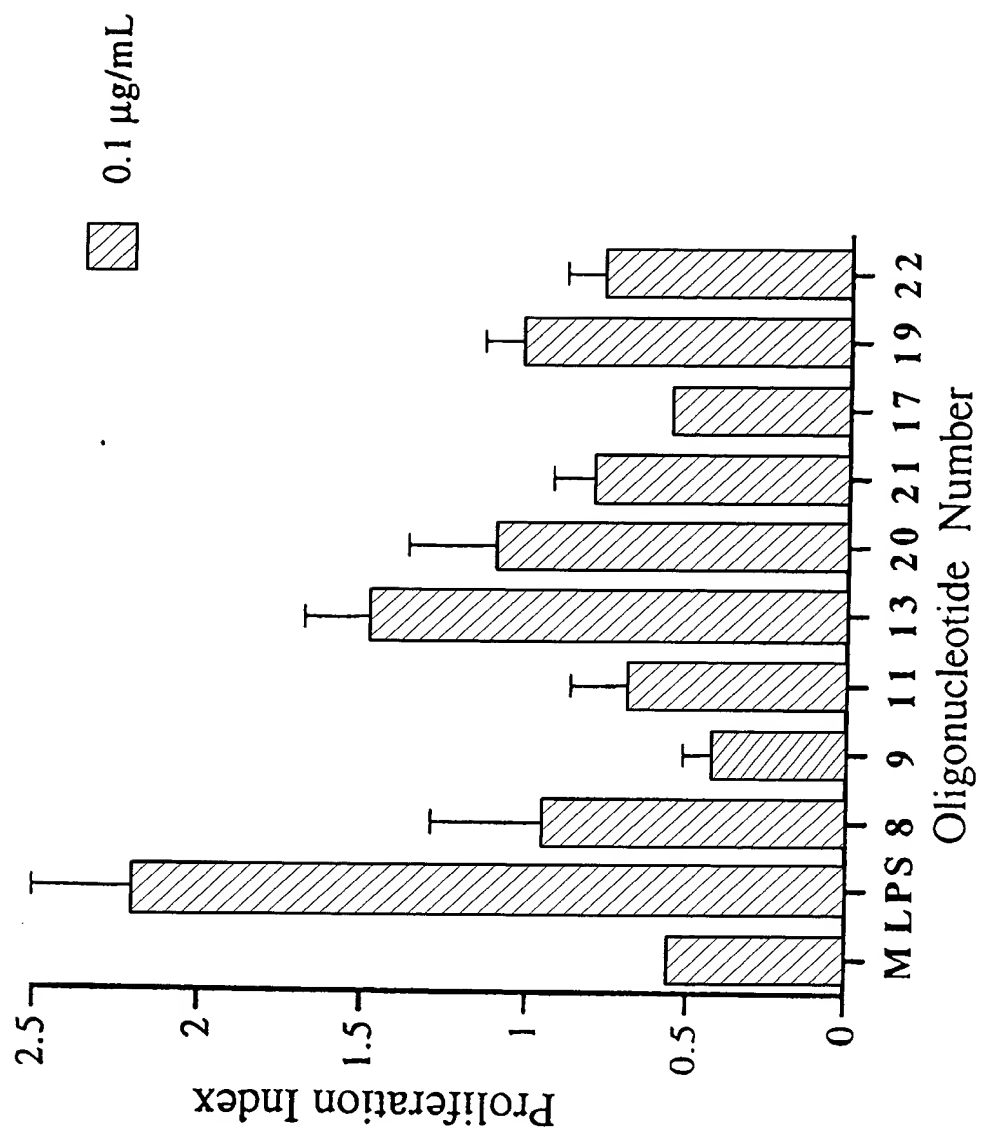


FIG. 1B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

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Oligo No. Sequence & Modification

SEQ ID NO.: 8	8	5'-CCTACTAGCGTTCTCATC-3' (133-1)
SEQ ID NO.: 9	9	5'-CCTACTAGCXTTCTCATC-3' (139-2)
SEQ ID NO.: 10	10	5'-CCTACTAXCGTTCTCATC-3' (133-2)
SEQ ID NO.: 11	11	5'-CCTACTXGCGTTCTCATC-3' (139-3)
SEQ ID NO.: 12	12	5'-CCTACXAGCGTTCTCATC-3' (133-3)
SEQ ID NO.: 13	13	5'-CCTAXTAGCGTTCTCATC-3' (139-4)
SEQ ID NO.: 14	14	5'-CCTXCTAGCGTTCTCATC-3' (133-4)
SEQ ID NO.: 15	15	5'-CCTXCTAGCCTTCTCATC-3' (145-10a)
SEQ ID NO.: 16	16	5'-CCTACTAGCGXTCTCATC-3' (133-5)
SEQ ID NO.: 17	17	5'-CCTACTAGCGTXCTCATC-3' (139-7)
SEQ ID NO.: 18	18	5'-CCTACTAGCGTTXTCATC-3' (133-6)
SEQ ID NO.: 19	19	5'-CCTACTAGCGTTCXCATC-3' (139-8)
SEQ ID NO.: 20	20	5'-CCTXXTAGCGTTCTCATC-3' (133-12)
SEQ ID NO.: 21	21	5'-XXTAGCGTTCTCATC-3' (139-6)
SEQ ID NO.: 22	22	5'-CCTACTAGCGTTCXXATC-3' (139-9)
SEQ ID NO.: 23	23	5'-CCTXCTXGCGTTCTCATC-3' (145-10b)

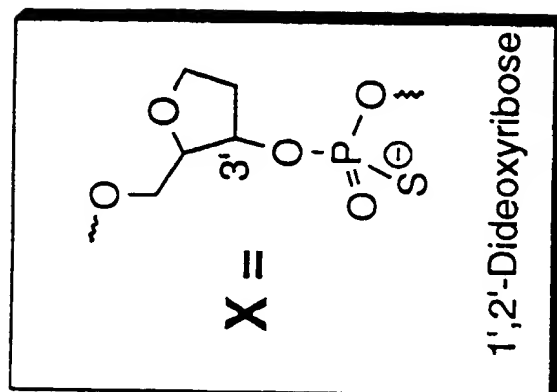


FIG. 2A

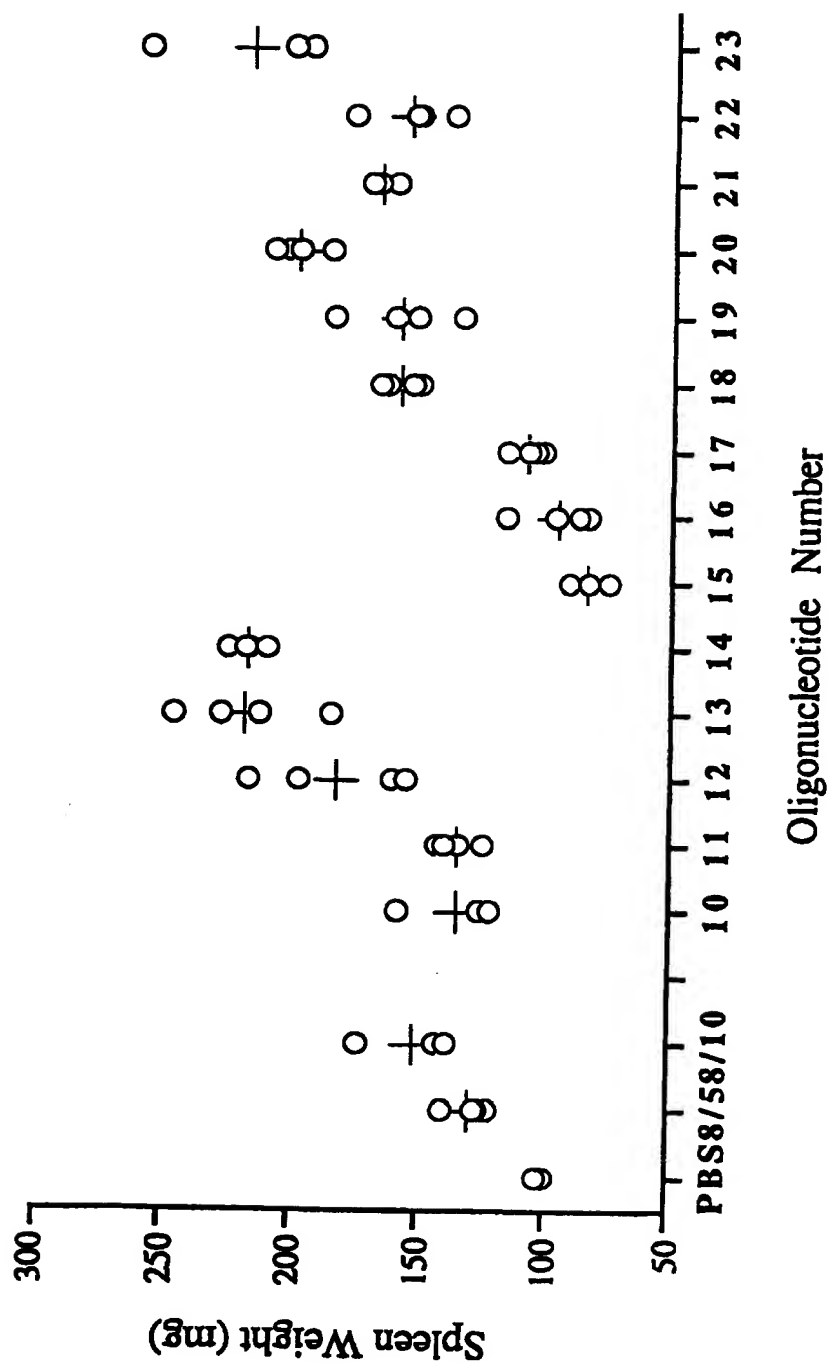


FIG. 2B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

<i>Oligo No.</i>	<i>Sequence & Modification</i>
SEQ ID NO.: 1	1 5'-CTATCTGACGTTCTCTGT-3' (131-1)
SEQ ID NO.: 105	2 5'-CTATCTGAXGTTCTCTGT-3' (131-13)
SEQ ID NO.: 106	3 5'-CTATCTGXCGTTCTCTGT-3' (131-2)
SEQ ID NO.: 107	4 5'-CTATCXGACGTTCTCTGT-3' (131-3)
SEQ ID NO.: 108	5 5'-CTAXCTGACGTTCTCTGT-3' (131-4)
SEQ ID NO.: 109	6 5'-CTATCTGACGXCTCTCTGT-3' (131-5)
SEQ ID NO.: 110	7 5'-CTATCTGACGTTXTCTGT-3' (131-6)

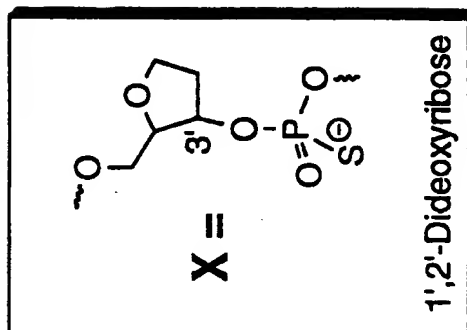


FIG. 3A

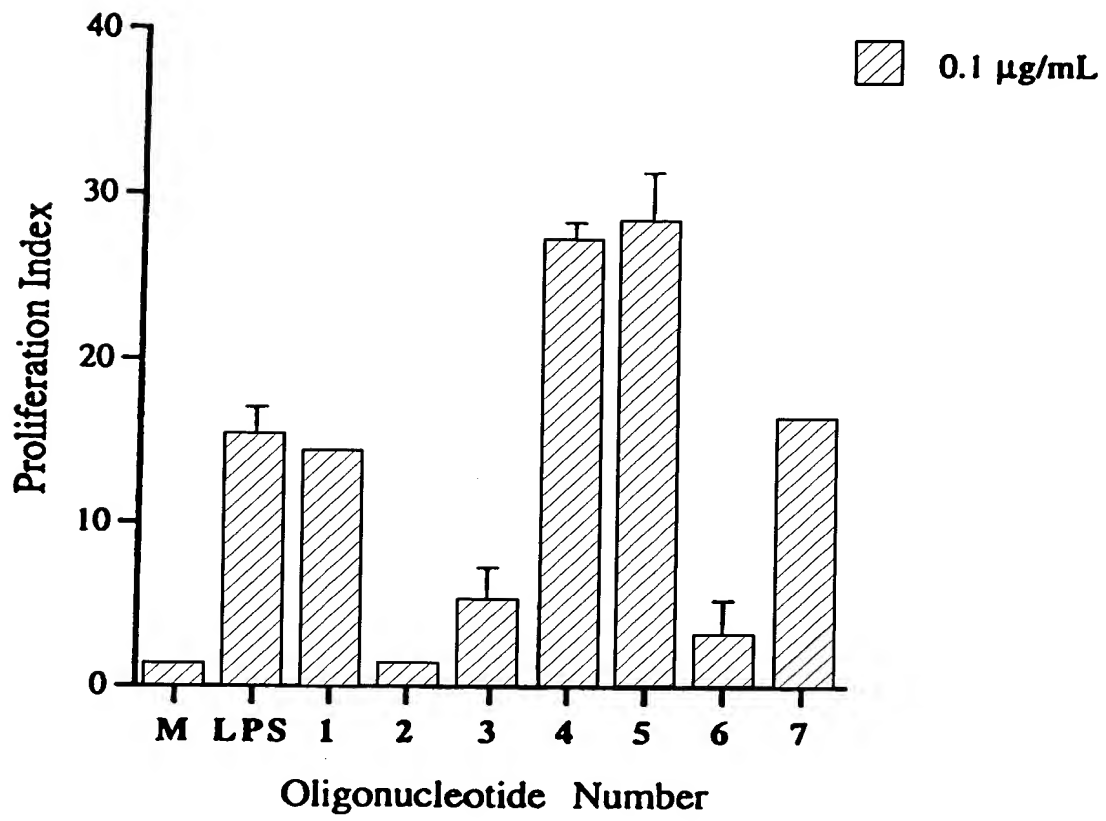


FIG. 3B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

Seq ID No.:	1	2	3	4	5	6	7
Seq ID NO.: 105	5'-CTATCTGACGTTCTCTGT-3' (131-1)	5'-CTATCTGAXGTTCTCTGT-3' (131-13)	5'-CTATCTGXC GTTCTCTGT-3' (131-2)	5'-CTATCTGACGTTCTCTGT-3' (131-3)	5'-CTAXCTGACGTTCTCTGT-3' (131-4)	5'-CTATCTGACGXTCTCTGT-3' (131-5)	5'-CTATCTGACGTTXTCTGT-3' (131-6)

Seq ID No.:	1	2	3	4	5	6	7
Seq ID NO.: 105	5'-CTATCTGACGTTCTCTGT-3' (131-1)	5'-CTATCTGAXGTTCTCTGT-3' (131-13)	5'-CTATCTGXC GTTCTCTGT-3' (131-2)	5'-CTATCTGACGTTCTCTGT-3' (131-3)	5'-CTAXCTGACGTTCTCTGT-3' (131-4)	5'-CTATCTGACGXTCTCTGT-3' (131-5)	5'-CTATCTGACGTTXTCTGT-3' (131-6)

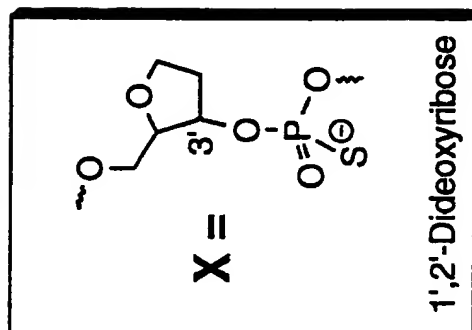


FIG. 4A

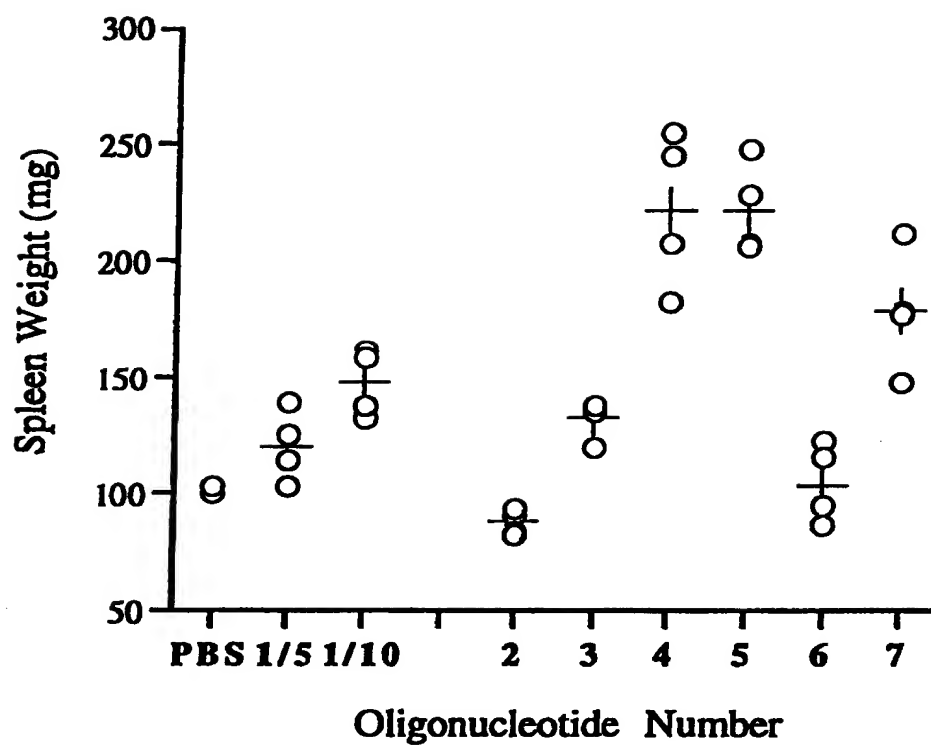


FIG. 4B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

<i>Oligo No.</i>	<i>Sequence & Modification</i>
SEQ ID NO.: 8	133-1
SEQ ID NO.: 24	141-2
SEQ ID NO.: 25	141-3
SEQ ID NO.: 26	141-4
SEQ ID NO.: 27	141-5
SEQ ID NO.: 28	141-6
SEQ ID NO.: 29	141-7
SEQ ID NO.: 30	141-8
SEQ ID NO.: 31	141-9
SEQ ID NO.: 1	131-1
SEQ ID NO.: 32	137-2
SEQ ID NO.: 33	137-3
SEQ ID NO.: 34	137-4

5'-CCTACTAGCGTTCTCATC-3'
 5'-CCTACTAGCXTTCTCATC-3'
 5'-CCTACTXGCGTTCTCATC-3'
 5'-CCTAXTAGCGTTCTCATC-3'
 5'-CCTXXTAGCGTTCTCATC-3'
 5'-XXTAGCGTTCTCATC-3'
 5'-CCTACTAGCGTXCTCATC-3'
 5'-CCTACTAGCGTTCXCATC-3'
 5'-CCTACTAGCGTTCXXATC-3'
 5'-CTATCTGACGTTCTCTGT-3'
 5'-CTATCTGXCGTTCTCTGT-3'
 5'-CTATCXGACGTTCTCTGT-3'
 5'-CTAXCTGACGTTCTCTGT-3'

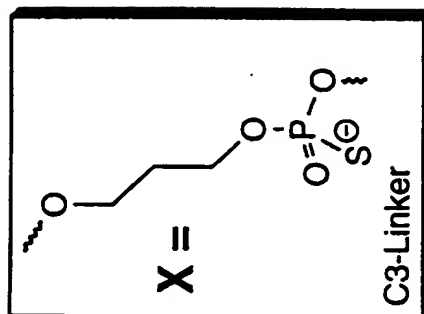


FIG. 5A

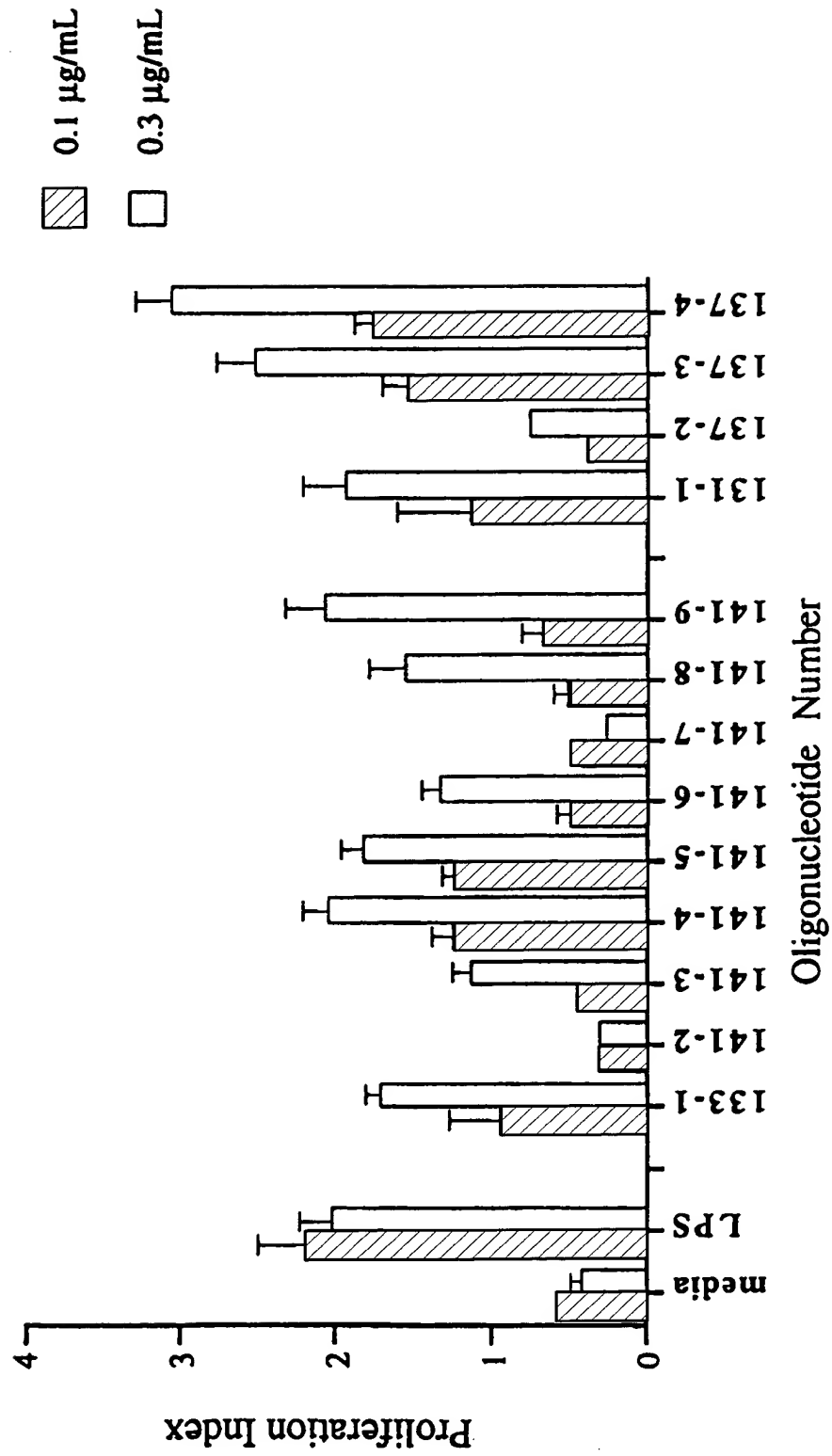


FIG. 5B

Seq ID No.	Seq	Modification
133-1	5'-CCTACTAGCGTTCTCATC-3'	
141-2	5'-CCTACTAGCXTTCTCATC-3'	
141-3	5'-CCTACTXGCGTTCTCATC-3'	
141-4	5'-CCTAXTAGCGTTCTCATC-3'	
141-5	5'-CCTXXTAGCGTTCTCATC-3'	
141-6	5'-XXTAGCGTTCTCATC-3'	
141-7	5'-CCTACTAGCGTXCTCATC-3'	
141-8	5'-CCTACTAGCGTTCXCATC-3'	
141-9	5'-CCTACTAGCGTTCXXATC-3'	
131-1	5'-CTATCTGACGTTCTCTGT-3'	
137-2	5'-CTATCTGXCGTTCTCTGT-3'	
137-3	5'-CTATCXGACGTTCTCTGT-3'	
137-4	5'-CTAXCTGACGTTCTCTGT-3'	

X =

C3-Linker

FIG. 6A

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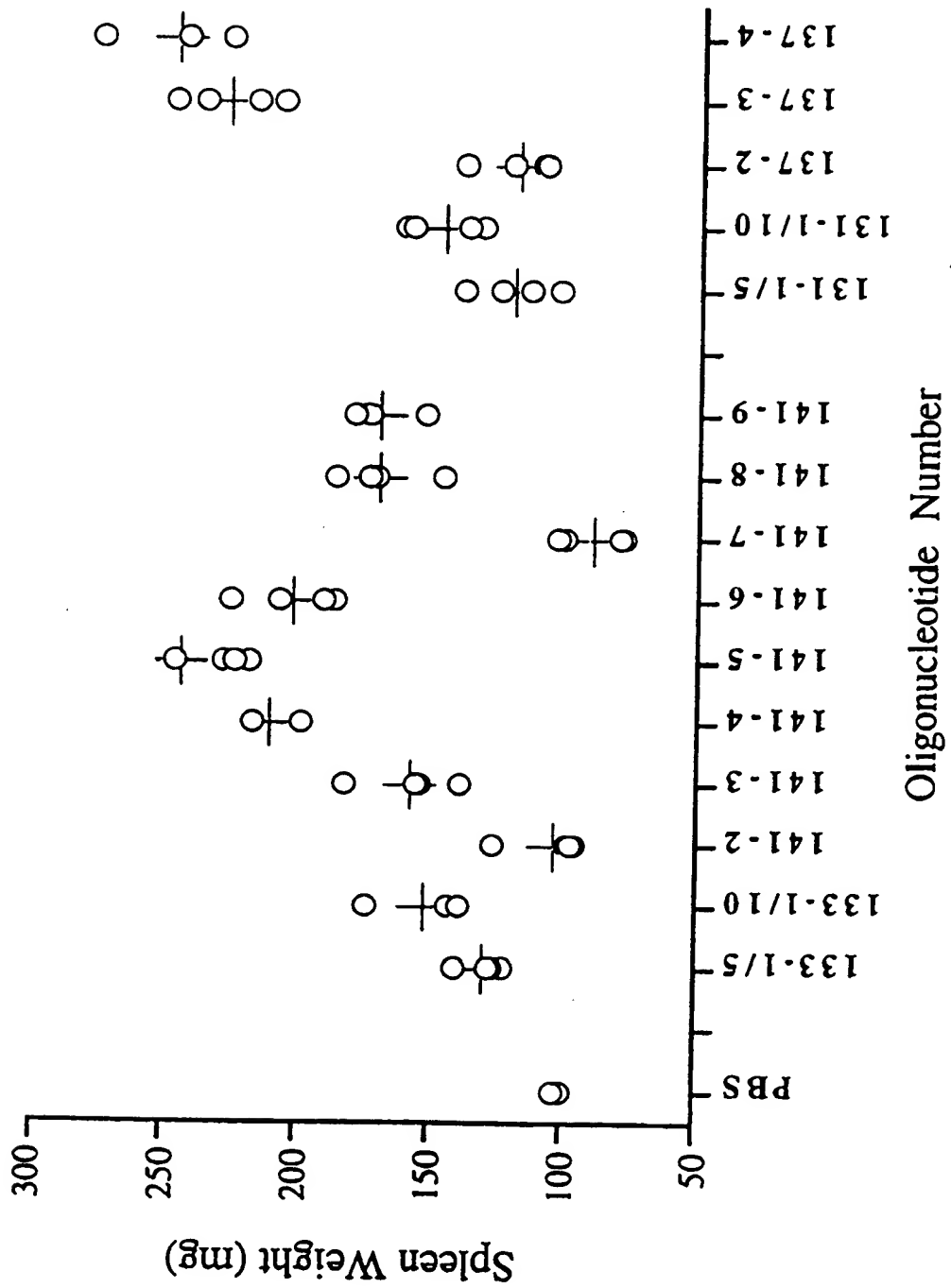


FIG. 6B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

<i>Oligo No.</i>	<i>Sequence & Modification</i>
SEQ ID NO.: 1	5'-CTATCTGACGTTCTCTGT-3' (131-1)
SEQ ID NO.: 35	5'-CTAXCTGACGTTCTCTGT-3' (153-1)
SEQ ID NO.: 36	5'-CTATCTGACGTTCCXCTGT-3' (153-2)
SEQ ID NO.: 37	5'-CTAYCTGACGTTCTCTGT-3' (153-3)
SEQ ID NO.: 38	5'-CTATCTGACGTTTCYCTGT-3' (153-4)
SEQ ID NO.: 8	5'-CCTACTAGCGTTCTCATC-3' (133-1)
SEQ ID NO.: 39	5'-CCTXCTAGCGTTCTCATC-3' (155-1)
SEQ ID NO.: 40	5'-CCTACTAGCGTTCCXCATC-3' (155-2)
SEQ ID NO.: 41	5'-CCTYCTAGCGTTCTCATC-3' (155-3)
SEQ ID NO.: 42	5'-CCTACTAGCGTTTCYCATC-3' (155-4)

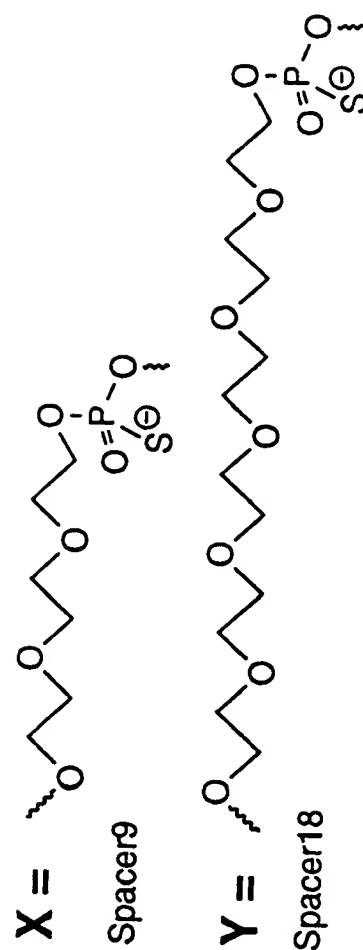


FIG. 7A

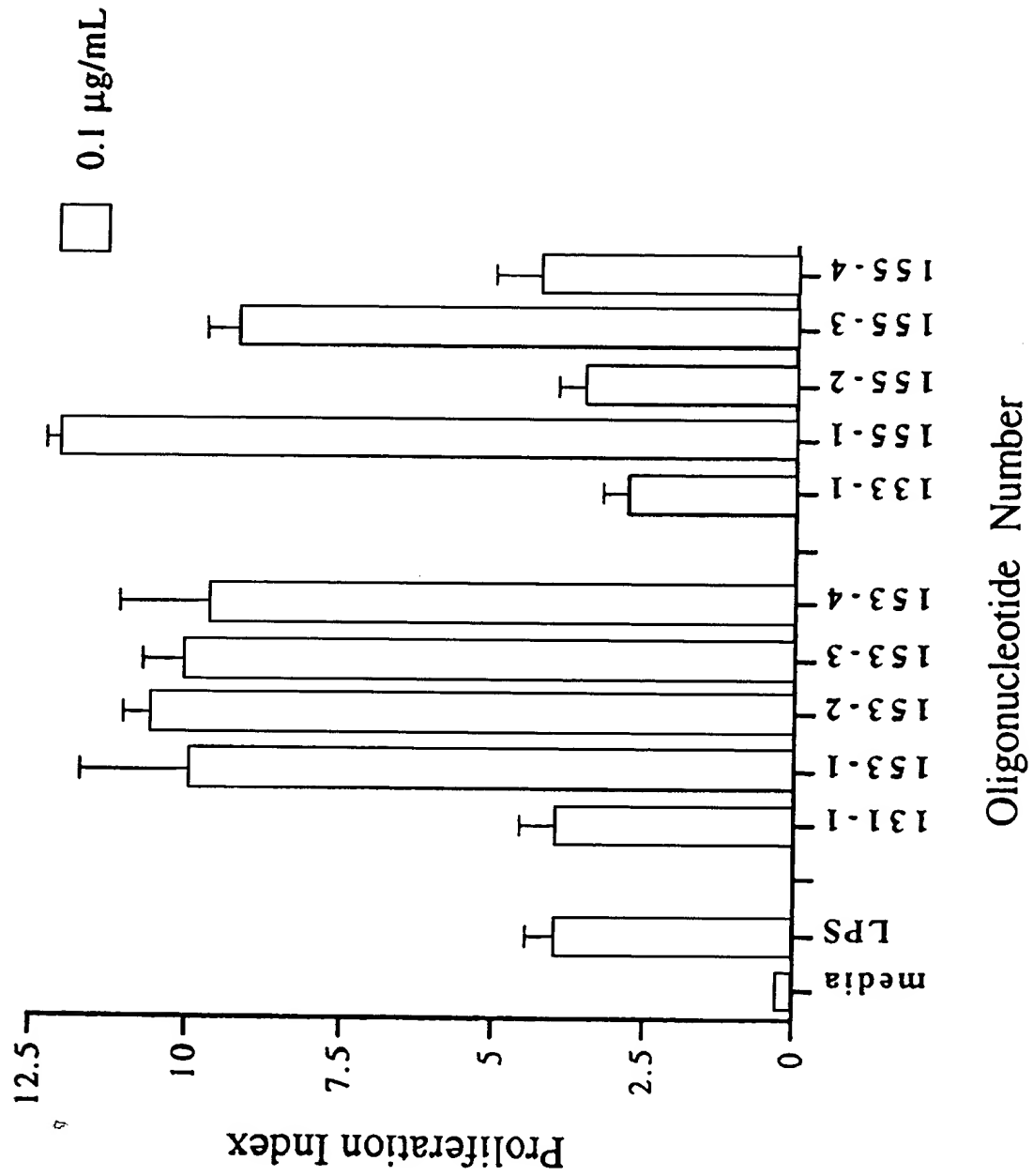


FIG. 7B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

Oligo No.	Sequence & Modification
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SEQ ID NO.: 1	1	5'-CTATCTGACGTTCTCTGT-3' (131-1)
SEQ ID NO.: 35	2	5'-CTAXCTGACGTTCTCTGT-3' (153-1)
SEQ ID NO.: 36	3	5'-CTATCTGACGTTCTCTGT-3' (153-2)
SEQ ID NO.: 37	4	5'-CTAYCTGACGTTCTCTGT-3' (153-3)
SEQ ID NO.: 38	5	5'-CTATCTGACGTTCTCTGT-3' (153-4)
SEQ ID NO.: 8	6	5'-CCTACTAGCGTTCTCATC-3' (133-1)
SEQ ID NO.: 39	7	5'-CCTXCTAGCGTTCTCATC-3' (155-1)
SEQ ID NO.: 40	8	5'-CCTACTAGCGTTCTCATC-3' (155-2)
SEQ ID NO.: 41	9	5'-CCTYCTAGCGTTCTCATC-3' (155-3)
SEQ ID NO.: 42	10	5'-CCTACTAGCGTTCTCATC-3' (155-4)

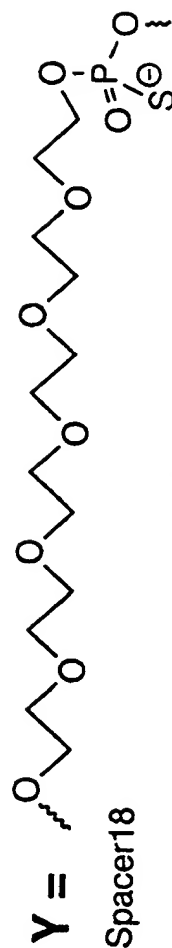
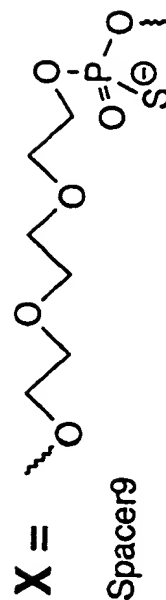


FIG. 8A

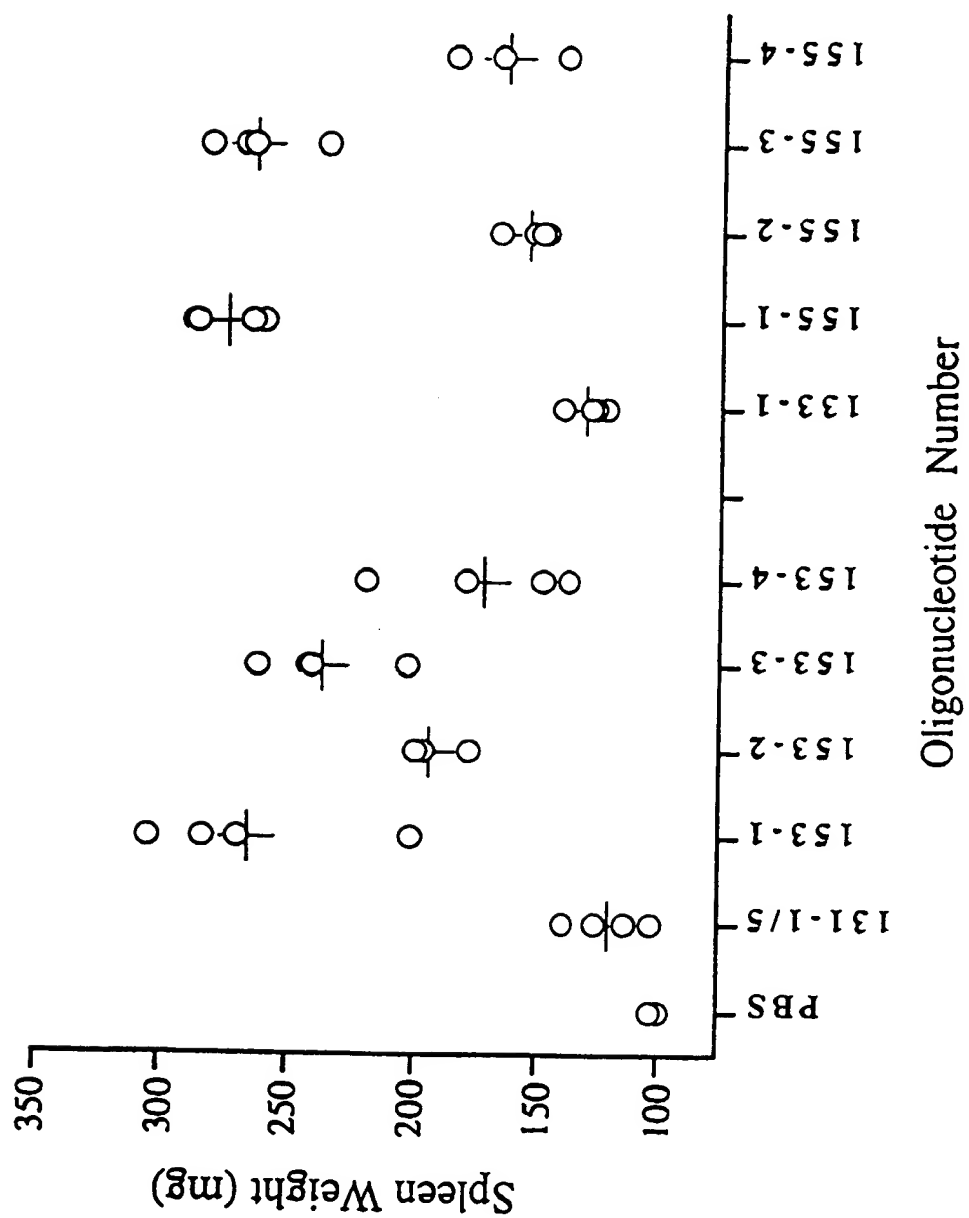


FIG. 8B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

<i>Oligo No.</i>	<i>Sequence & Modification</i>
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SEQ ID NO.: 1	1	5'-CTATCTGACGTTCTCTGT-3' (131-1)
SEQ ID NO.: 43	2	5'-CTATCTGXCGTTCTCTGT-3' (157-1)
SEQ ID NO.: 44	3	5'-CTATCTXACGTTCTCTGT-3' (157-2)
SEQ ID NO.: 45	4	5'-CTAXCTGACGTTCTCTGT-3' (157-3)
SEQ ID NO.: 46	5	5'-CTATCTGACGTXCTCTGT-3' (157-4)
SEQ ID NO.: 47	6	5'-CTATCTGACGTTXCCTGT-3' (157-5)

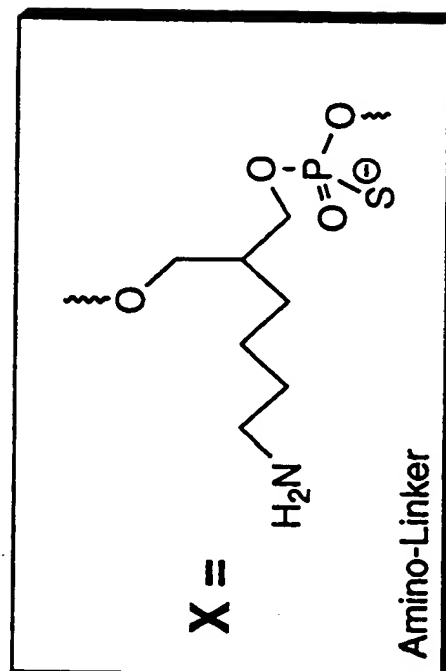


FIG. 9A

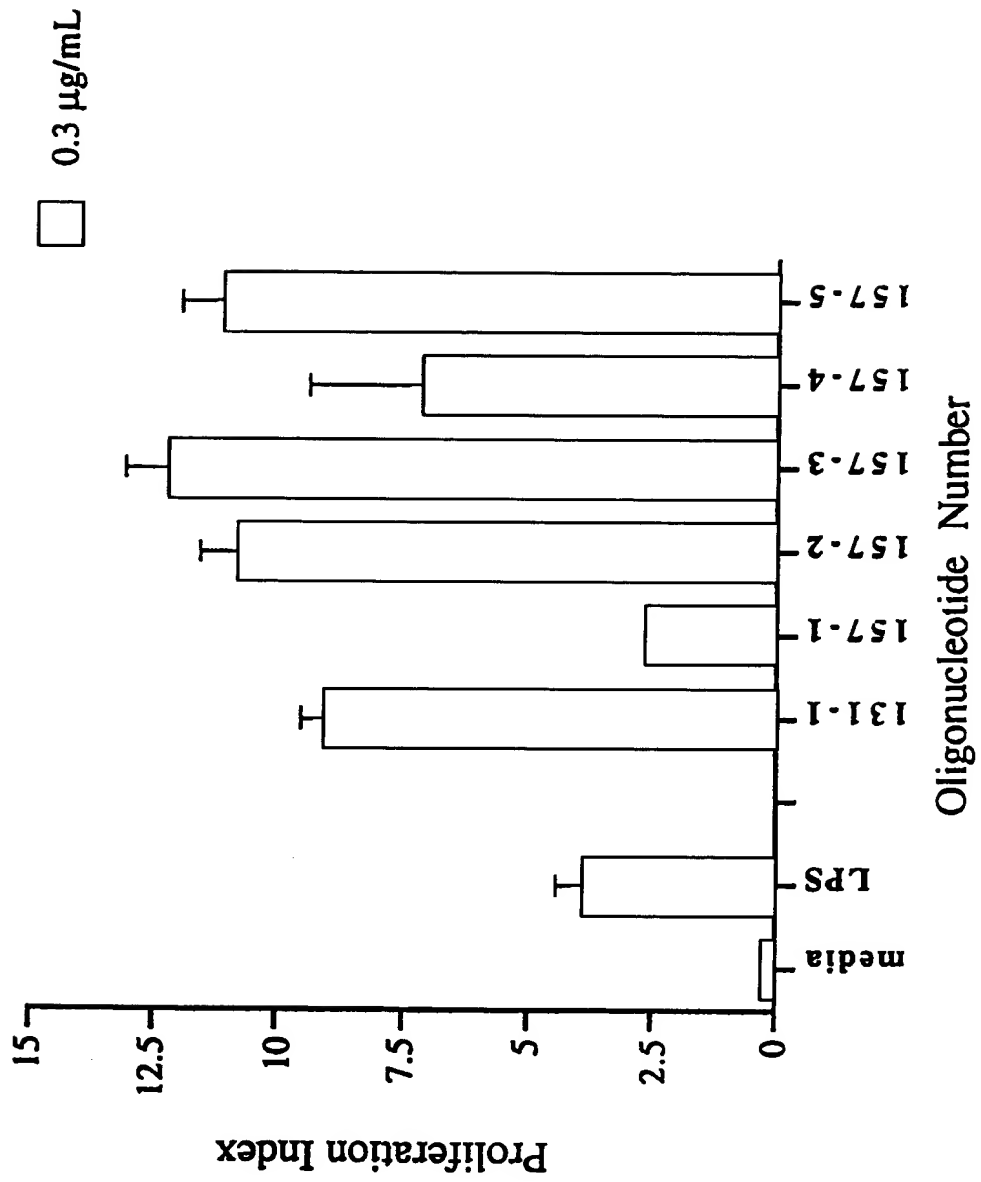


FIG. 9B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

Seq ID No.	1	2	3	4	5	6
Seq ID NO.: 43	5'-CTATCTGACGTTCTCTGT-3' (131-1)	5'-CTATCTGXCGTTCTCTGT-3' (157-1)	5'-CTATCTXACGTTCTCTGT-3' (157-2)	5'-CTAXCTGACGTTCTCTGT-3' (157-3)	5'-CTATCTGACGTXCTCTGT-3' (157-4)	5'-CTATCTGACGTTCXCTGT-3' (157-5)

Seq ID No.	1	2	3	4	5	6
Seq ID NO.: 43	5'-CTATCTGACGTTCTCTGT-3' (131-1)	5'-CTATCTGXCGTTCTCTGT-3' (157-1)	5'-CTATCTXACGTTCTCTGT-3' (157-2)	5'-CTAXCTGACGTTCTCTGT-3' (157-3)	5'-CTATCTGACGTXCTCTGT-3' (157-4)	5'-CTATCTGACGTTCXCTGT-3' (157-5)

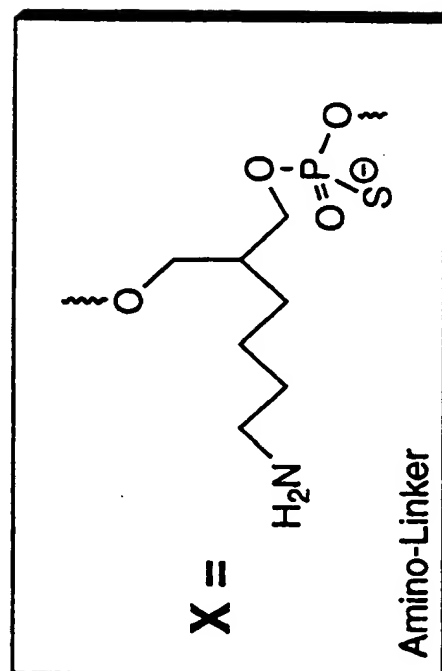


FIG. 10A

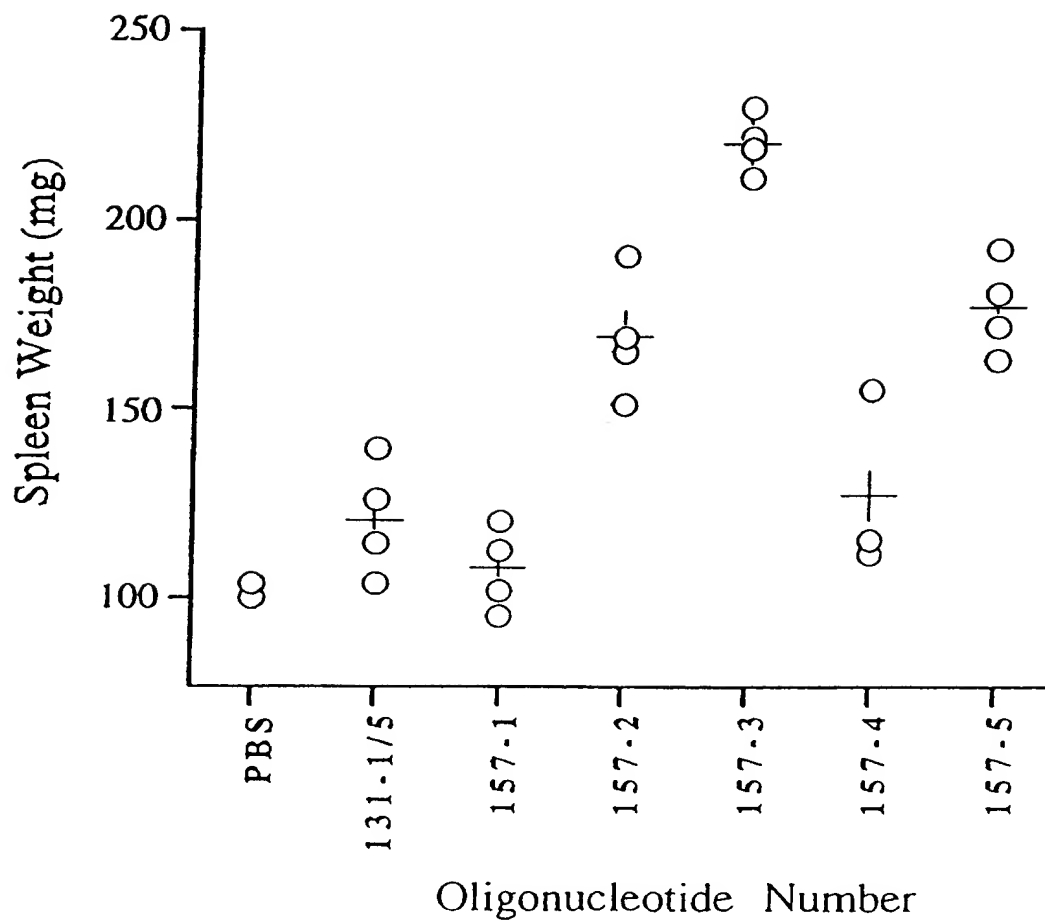


FIG. 10B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

<i>Oligo No.</i>	<i>Sequence & Modification</i>
SEQ ID NO.: 1 131-1	5'-CTATCTGACGTTCTCTGT-3'
SEQ ID NO.: 48 159-1	5'-CTATCTGACXTTTCTCTGT-3'
SEQ ID NO.: 49 159-2	5'-CTATCTGAXGTTCTCTGT-3'
SEQ ID NO.: 50 159-3	5'-CTATXTGACGTTCTCTGT-3'
SEQ ID NO.: 51 159-4	5'-CTATCTGACGTTCTXTGT-3'
SEQ ID NO.: 8 133-1	5'-CCTACTAGCGTTCTCATC-3'
SEQ ID NO.: 52 161-1	5'-CCTACTAGCXTTTCTCATC-3'
SEQ ID NO.: 53 161-2	5'-CCTACTAGXGTTCTCATC-3'
SEQ ID NO.: 54 161-3	5'-CCTACTAXCGTTTCTCATC-3'
SEQ ID NO.: 55 161-4	5'-CCTAXTAGCGTTTCTCATC-3'
SEQ ID NO.: 56 161-5	5'-CCTACTAGCGTTCTXATC-3'

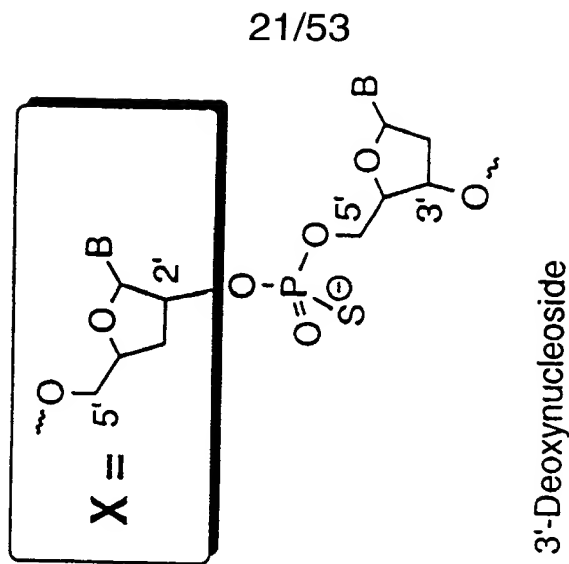


FIG. 11A

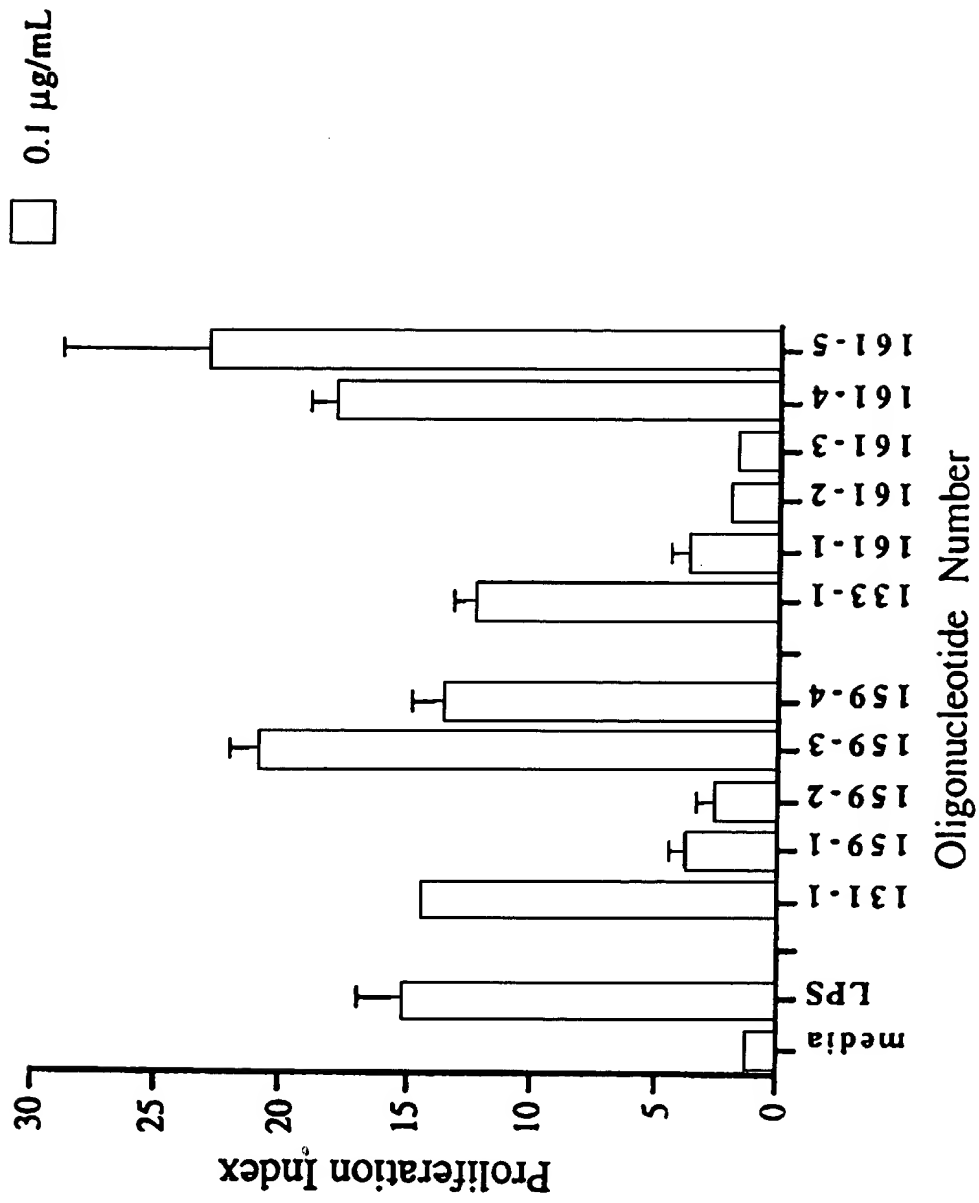
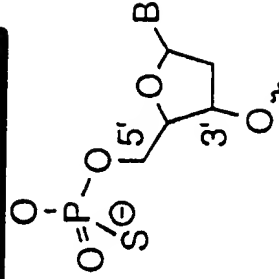
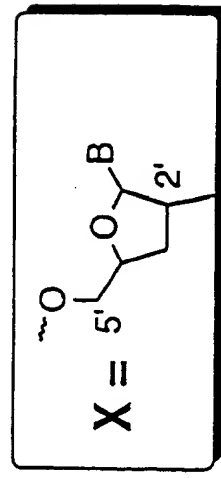


FIG. 11B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

Oligo No. Sequence & Modification

SEQ ID NO.: 1	131-1	5'-CTATCTGACGTTCTCTGT-3'
SEQ ID NO.: 48	159-1	5'-CTATCTGACXTTCTCTGT-3'
SEQ ID NO.: 49	159-2	5'-CTATCTGAXGTTCTCTGT-3'
SEQ ID NO.: 50	159-3	5'-CTATXTGACGTTCTCTGT-3'
SEQ ID NO.: 51	159-4	5'-CTATCTGACGTTCTXTGT-3'
SEQ ID NO.: 8	133-1	5'-CCTACTAGCGTTCTCATC-3'
SEQ ID NO.: 52	161-1	5'-CCTACTAGCXTTCTCATC-3'
SEQ ID NO.: 53	161-2	5'-CCTACTAGXGTTCTCATC-3'
SEQ ID NO.: 54	161-3	5'-CCTACTAXCGTTCTCATC-3'
SEQ ID NO.: 55	161-4	5'-CCTAXTAGCGTTCTCATC-3'
SEQ ID NO.: 56	161-5	5'-CCTACTAGCGTTCTXATC-3'



3'-Deoxynucleoside

FIG. 12A

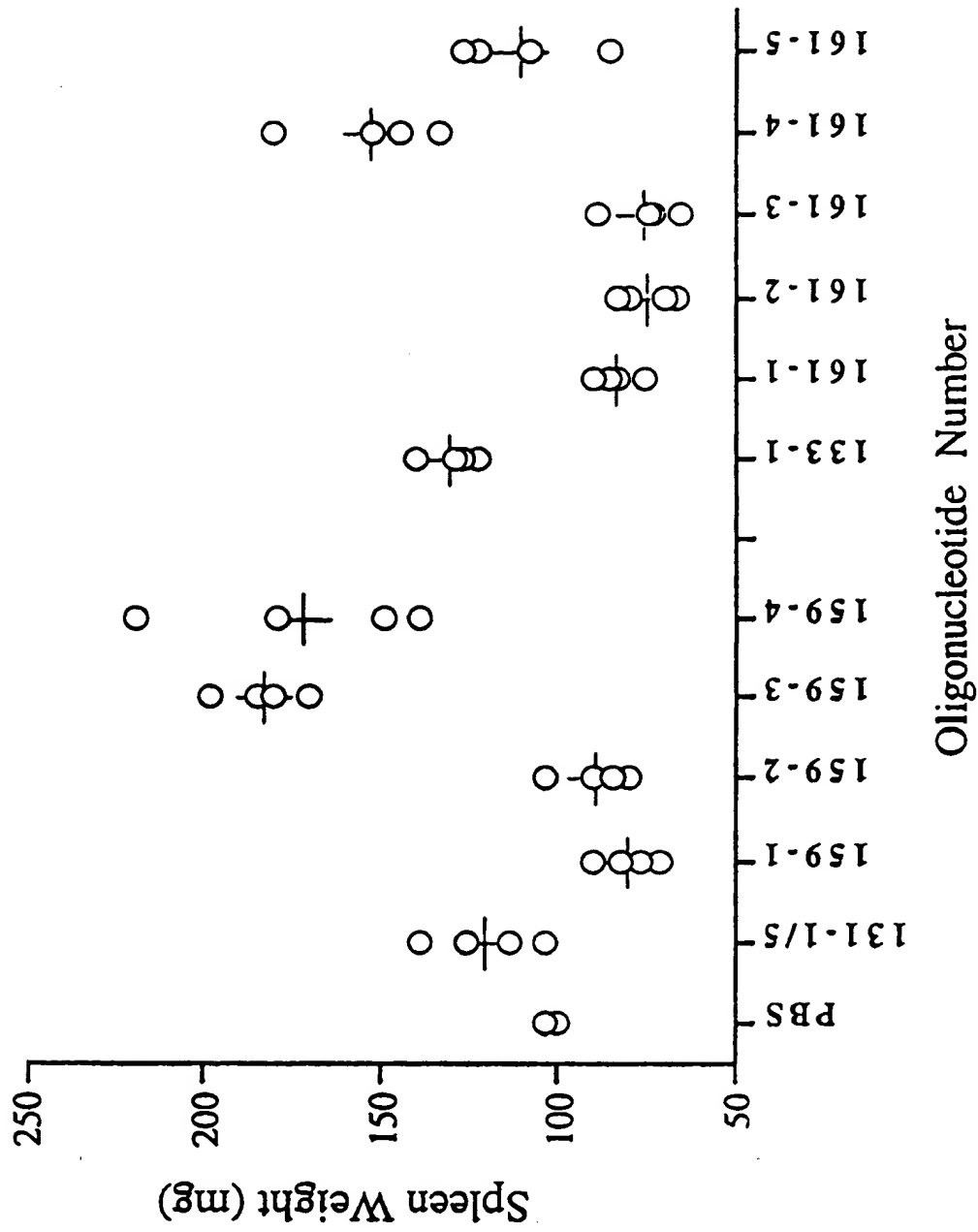


FIG. 12B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

SEQ ID NO.: 1	131-1	5'-CTATCTGACGTTCTCTGT-3'
SEQ ID NO.: 57	167-1	5'-CTATCTGXCGTTCTCTGT-3'
SEQ ID NO.: 58	167-2	5'-CTATCTXACGTTCTCTGT-3'
SEQ ID NO.: 59	167-3	5'-CTATCXGACGTTCTCTGT-3'
SEQ ID NO.: 60	167-4	5'-CTATXTGACGTTCTCTGT-3'
SEQ ID NO.: 61	167-5	5'-CTAXCTGACGTTCTCTGT-3'
SEQ ID NO.: 62	167-6	5'-CTXCTGACGTTCTCTGT-3'
SEQ ID NO.: 63	167-7	5'-CTATCTGACGXTCTCTGT-3'
SEQ ID NO.: 64	167-8	5'-CTATCTGACGTXCTCTGT-3'
SEQ ID NO.: 65	167-9	5'-CTATCTGACGTTXCTCTGT-3'
SEQ ID NO.: 66	167-10	5'-CTATCTGACGTTXCXCTGT-3'
SEQ ID NO.: 67	16711	5'-CTATCTGACGTTCTXTGT-3'
SEQ ID NO.: 68	167-12	5'-CTATCTGACGTTCTXXGT-3'

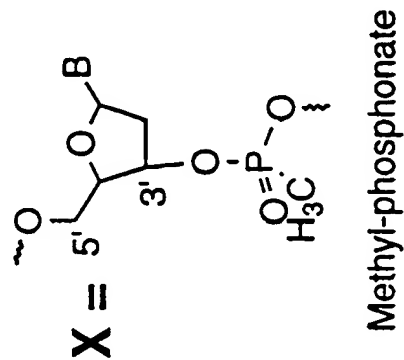


FIG. 13A

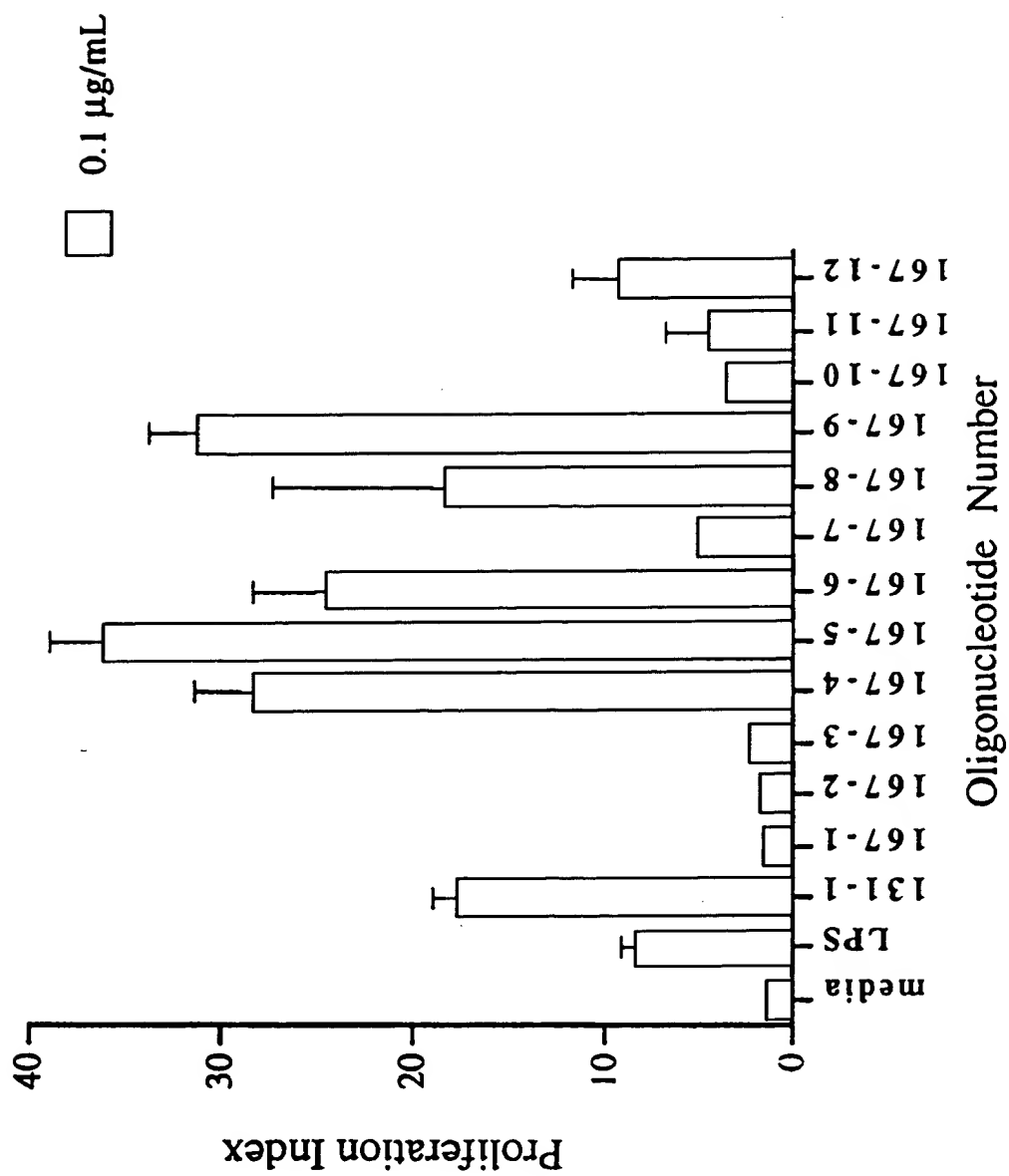


FIG. 13B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

SEQ ID NO.: 1	131-1	5'-CTATCTGACGTTCTCTGT-3'
SEQ ID NO.: 57	167-1	5'-CTATCTGXCGTTCTCTGT-3'
SEQ ID NO.: 58	167-2	5'-CTATCTXACGTTCTCTGT-3'
SEQ ID NO.: 59	167-3	5'-CTATCXGACGTTCTCTGT-3'
SEQ ID NO.: 60	167-4	5'-CTATXGACGTTCTCTGT-3'
SEQ ID NO.: 61	167-5	5'-CTAXCTGACGTTCTCTGT-3'
SEQ ID NO.: 62	167-6	5'-CTXXCTGACGTTCTCTGT-3'
SEQ ID NO.: 63	167-7	5'-CTATCTGACGXTCTCTGT-3'
SEQ ID NO.: 64	167-8	5'-CTATCTGACGTXCTCTGT-3'
SEQ ID NO.: 65	167-9	5'-CTATCTGACGTTXCTCTGT-3'
SEQ ID NO.: 66	167-10	5'-CTATCTGACGTTXCXCTGT-3'
SEQ ID NO.: 67	16711	5'-CTATCTGACGTTCTXCTGT-3'
SEQ ID NO.: 68	167-12	5'-CTATCTGACGTTCTXXGT-3'

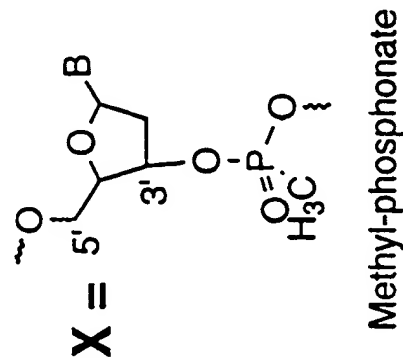


FIG. 14A

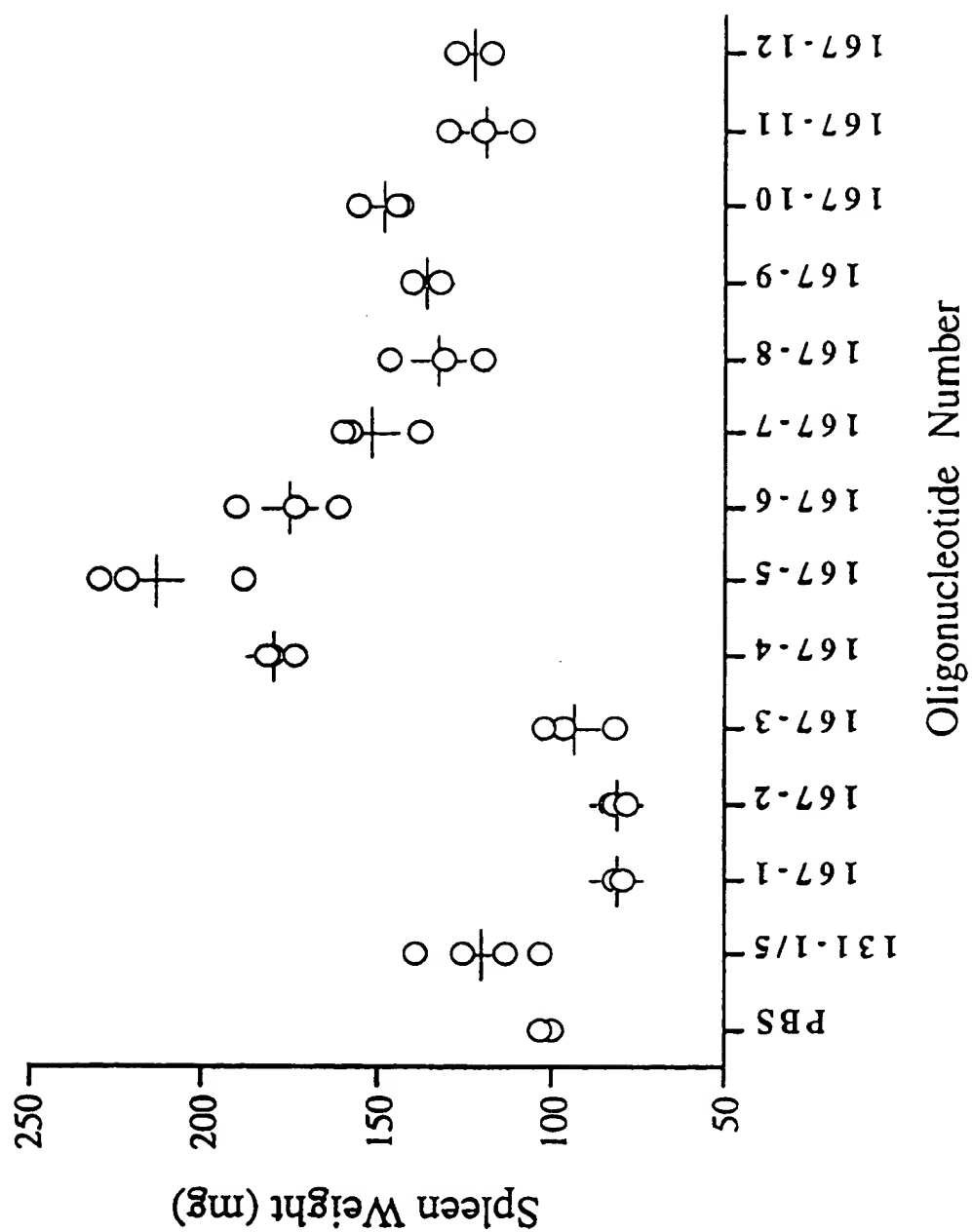
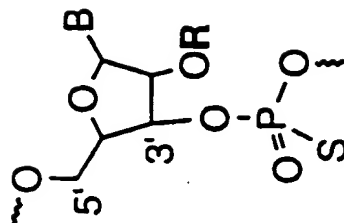


FIG. 14B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

Oligo No. Sequence & Modification

SEQ ID NO.: 69	113-1	5'-TCCATGACGTTCCCTGATGC-3'
SEQ ID NO.: 70	23-1	5'-TCCATGXCGTTCCCTGATGC-3'
SEQ ID NO.: 71	23-3	5'-TCCAXGACGTTCCCTGATGC-3'
SEQ ID NO.: 72	29-2	5'-TYVATGACGGTCCCTGATGC-3'



R_x = 2'-O-Methylribonucleoside
R_y = 2'-O-Methoxyethoxyribonucleoside

FIG. 15A

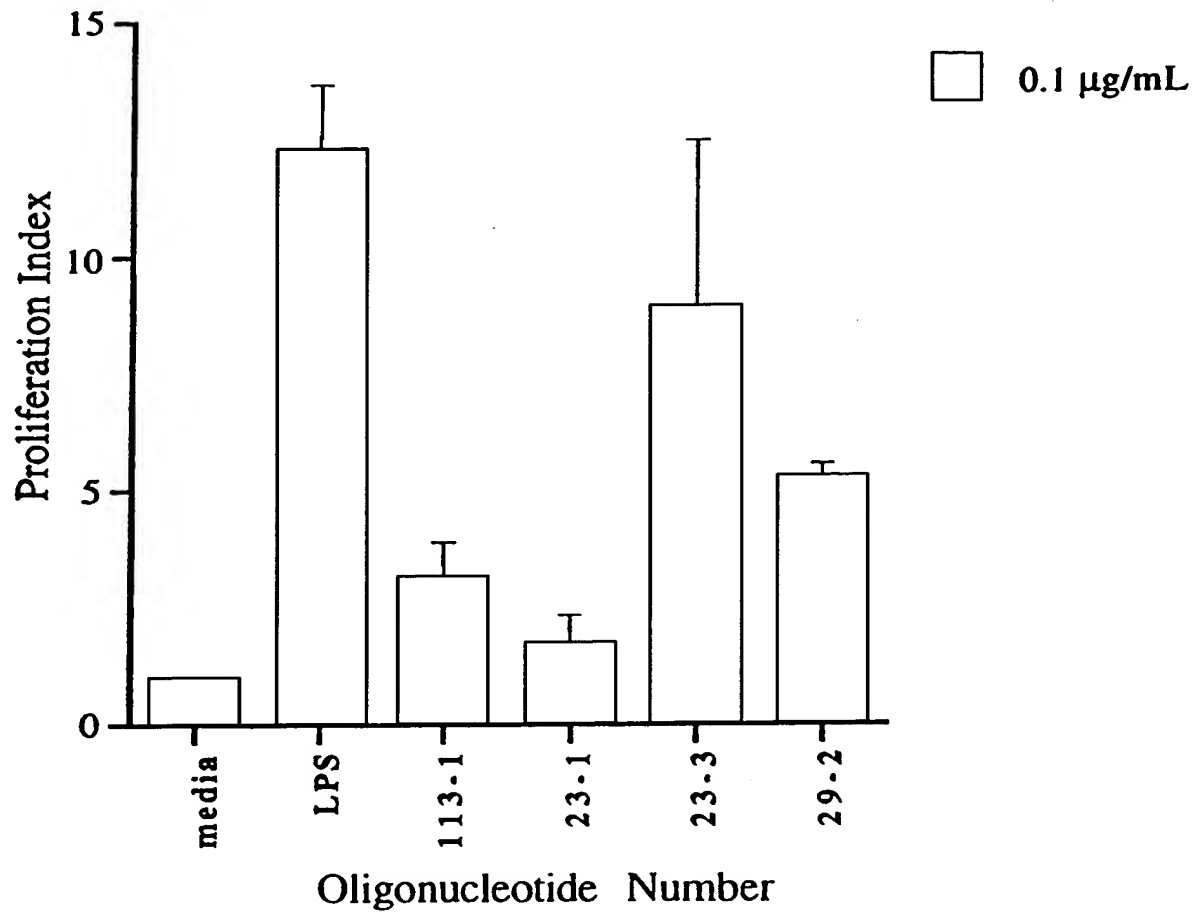


FIG. 15B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

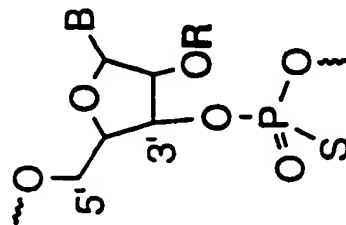
| Seq ID No. | Seq | Modification | |------------|----------------------------|--------------| | 113-1 | 5'-TCCATGACGTTCCCTGATGC-3' | | | 23-1 | 5'-TCCATGXCGTTCCCTGATGC-3' | | | 23-3 | 5'-TCCAXGACGTTCCCTGATGC-3' | | | 29-2 | 5'-TYVATGACGGTCCCTGATGC-3' | |

SEQ ID NO.: 69 113-1 5'-TCCATGACGTTCCCTGATGC-3'

SEQ ID NO.: 70 23-1 5'-TCCATGXCGTTCCCTGATGC-3'

SEQ ID NO.: 71 23-3 5'-TCCAXGACGTTCCCTGATGC-3'

SEQ ID NO.: 72 29-2 5'-TYVATGACGGTCCCTGATGC-3'



R_x = 2'-O-Methylribonucleoside

R_y = 2'-O-Methoxyethoxyribonucleoside

FIG. 16A

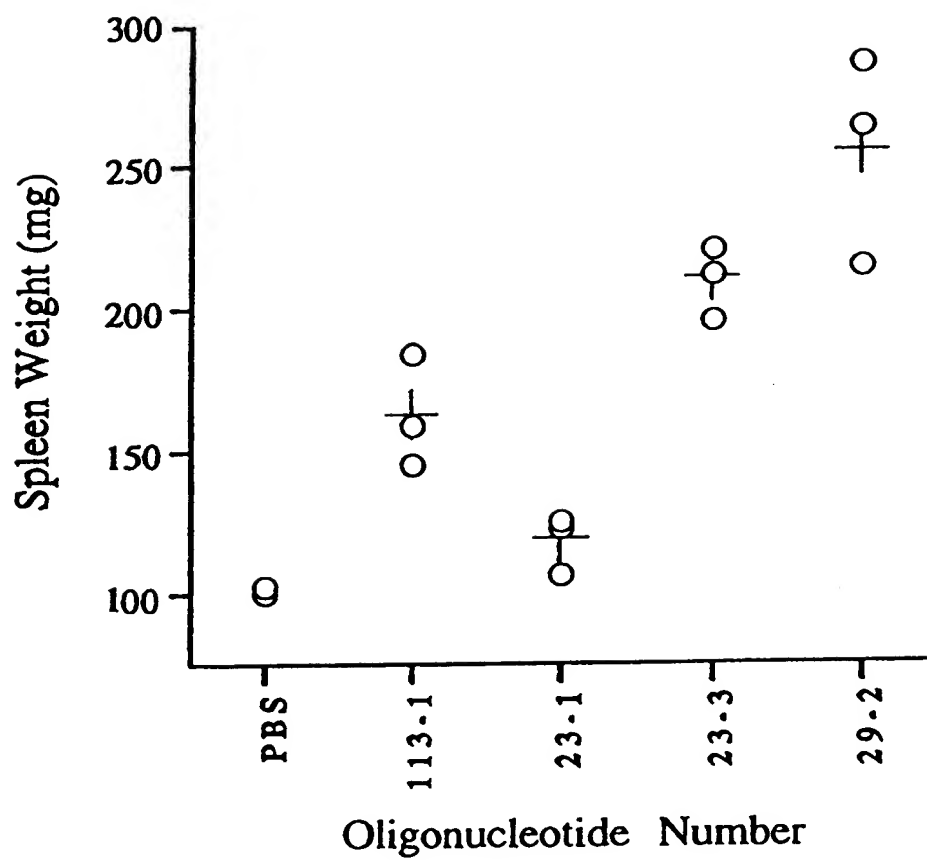


FIG. 16B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES















<i>Oligo No.</i>	<i>Sequence & Modification</i>
SEQ ID NO.: 73 1	5'-G A G A A C G C T C G A C C T T-3' 
SEQ ID NO.: 74 2	5'-G A G A A C G C T C G A C C T T-3'  5'-G A G A A C G C T C G A C C T T-3' 
SEQ ID NO.: 75 3	3'-T T C C A G C T C G C A A G A G-5'  5'-G A G A A C G C T C G A C C T T-3' 
SEQ ID NO.: 76 4	5'-G A G A A C G C T C G A C C T T-3'  3'-T T C C A G C T C G C A A G A G-5' 
SEQ ID NO.: 77 5	5'-T C T C C C A G C G T G C G C C A T-3' 
SEQ ID NO.: 78 6	5'-T C C C A G C G T G C G C C A T-3'  5'-T C C C A G C G T G C G C C A T-3' 
SEQ ID NO.: 79 7	3'-T A C C G C G T G C G A C C C T-5'  5'-T C C C A G C G T G C G C C A T-3' 
SEQ ID NO.: 80 8	5'-T C C C A G C G T G C G C C A T-3'  3'-T A C C G C G T G C G A C C C T-5' 

FIG. 17A

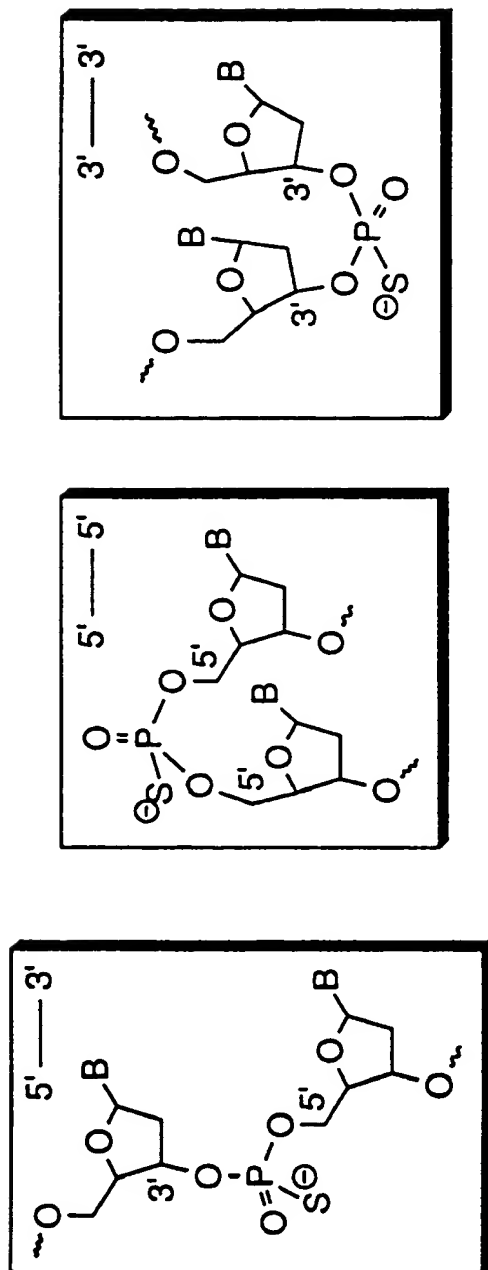


FIG. 17B

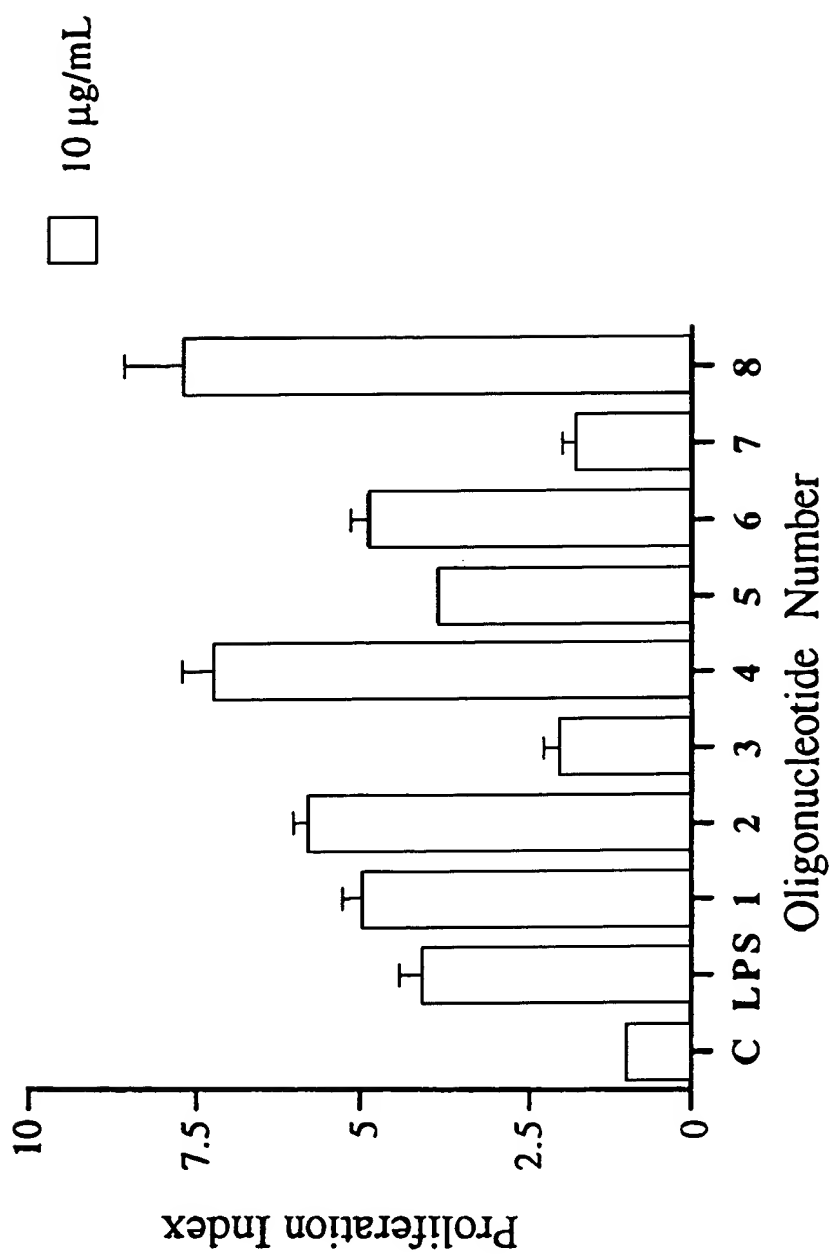


FIG. 17C

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

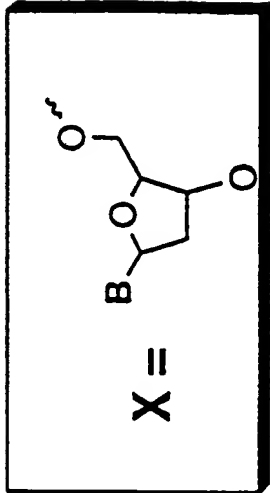
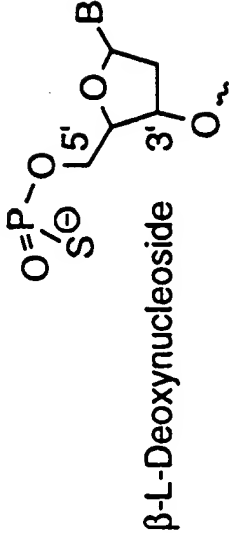
Oligo No.	Sequence & Modification	<div data-bbox="625 220 893 709">  </div> <div data-bbox="901 178 1128 709">  <p data-bbox="1031 367 1079 709">β-L-Deoxynucleoside</p> </div>
SEQ ID NO.: 1 131-1	5'-CTATCTGACGTTCTCTGT-3'	
SEQ ID NO.: 81 175-1	5'-CTATXTGACGTTCTCTGT-3'	
SEQ ID NO.: 82 175-2	5'-CTATCTGACGTTXCXCTGT-3'	
SEQ ID NO.: 83 175-3	5'-CTAXXTGACGTTCTCTGT-3'	
SEQ ID NO.: 84 175-4	5'-CTATCTGACGTTXCXCTGT-3'	
SEQ ID NO.: 85 175-5	5'-CTATCTGAXXTTCTCTGT-3'	
SEQ ID NO.: 86 175-6	5'-CTATCTXACGTTCTCTGT-3'	
SEQ ID NO.: 87 175-7	5'-CTATCTGACGTXCCTCTGT-3'	
SEQ ID NO.: 88 175-9	5'-CTATCTGACGTTCTCTGT-3' (all- β -L-DNA/PS)	

FIG. 18A

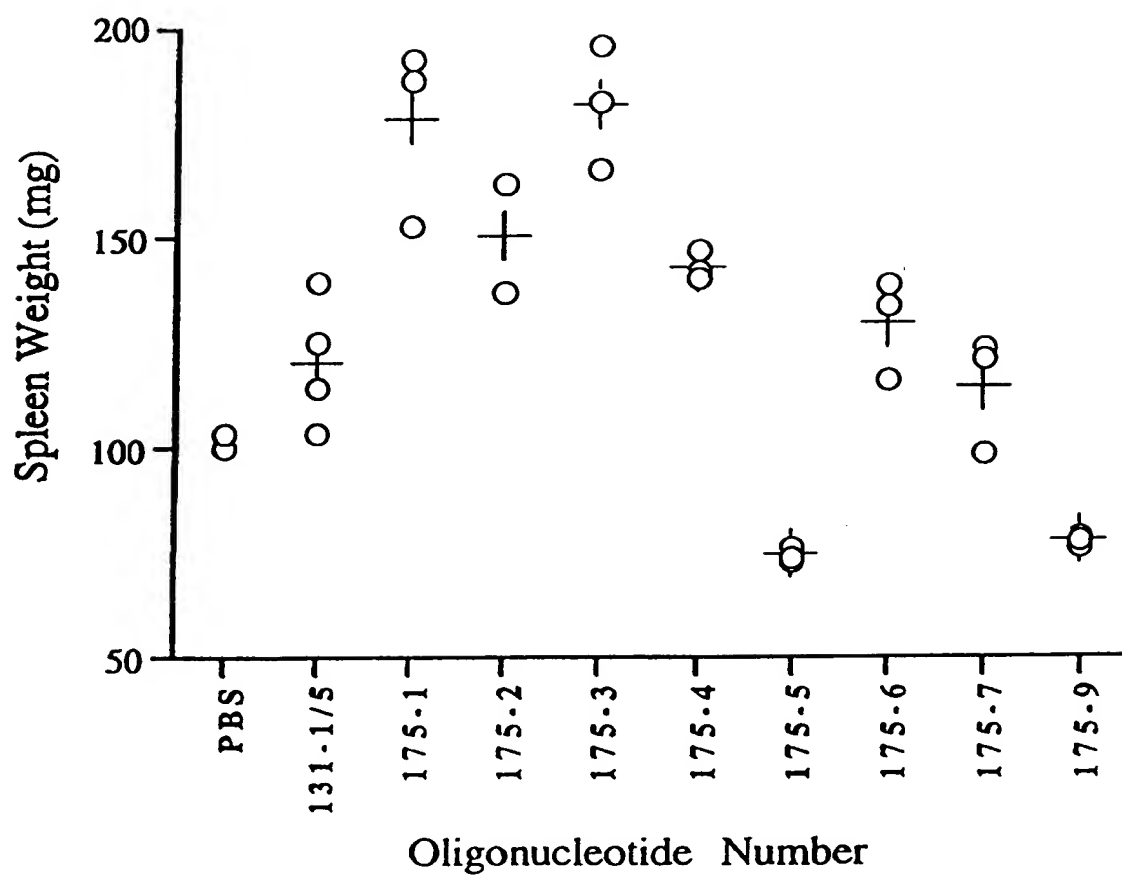
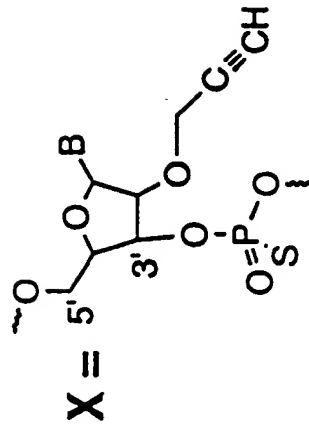


FIG. 18B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

Oligo No.	Sequence & Modification
SEQ ID NO.: 1 131-1	5'-CTATCTGACGTTCTCTGT-3'
SEQ ID NO.: 89 173-1	5'-CTATX X TGACGTTCTCTGT-3'
SEQ ID NO.: 90 173-2	5'-CTATCTGACGTTCT X TGT-3'



2'-O-Propargyl-ribonucleoside

FIG. 19A

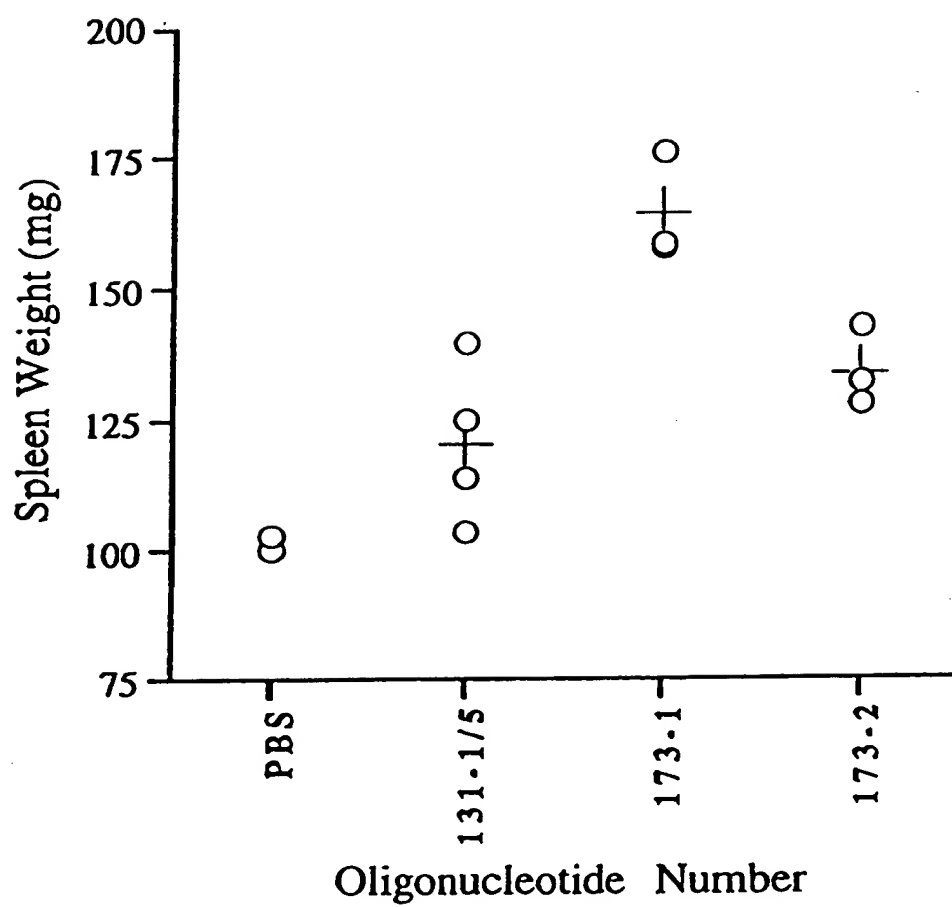


FIG. 19B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND MODIFICATION OF LINKAGES

<i>Oligo No.</i>		<i>Sequence & Modification</i>
SEQ ID NO.: 8	133-1	5'-CCTACTAGCGTTCTCATC-3'
SEQ ID NO.: 91	143-1	5'-CCTXXTAGCGTTCTCATC-3'
SEQ ID NO.: 92	143-2	5'-CCTYYTAGCGTTCTCATC-3'
SEQ ID NO.: 93	143-3	5'-CCTZZTAGCGTTCTCATC-3'
SEQ ID NO.: 94	143-4	5'-CCTXXTAGCGTVCTCATC-3'
SEQ ID NO.: 95	143-5	5'-CCTACTAGGCTTCTCATC-3'

X = 1',2'-Dideoxyribose
Y = C3-Linker
Z = 3'-OMe
V = 2'-OMe

FIG. 20A

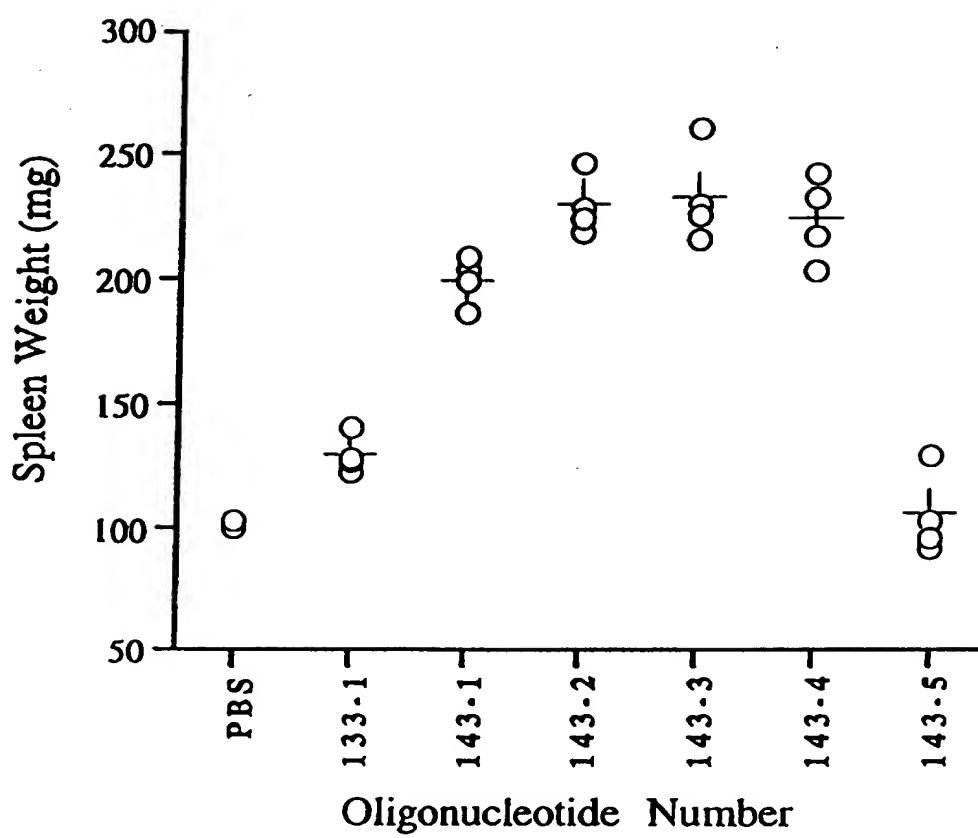


FIG. 20B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND
MODIFICATION OF LINKAGES

<i>Oligo No.</i>	<i>Sequence & Modification</i>
SEQ ID NO.: 1 1	5'-CTATCTGAC <u>G</u> TTCTCTGT-3' (131-1)
SEQ ID NO.: 96 2	5'-CTATCTGAC <u>G</u> *TTCTCTGT-3' (E 633L)
SEQ ID NO.: 97 3	5'-CTATCTGAG* <u>CT</u> TTCTCTGT-3' (E 636)
SEQ ID NO.: 98 4	5'-TCTCCCAG <u>C</u> GTG <u>C</u> GCCAT-3'
SEQ ID NO.: 99 5	5'-TCTCCCAG <u>C</u> G*TG <u>C</u> G*CCAT-3' (E 603)
SEQ ID NO.: 100 6	5'-CTATXTGAC <u>G</u> *TTCTCTGT-3' (E 639L)

FIG. 21A

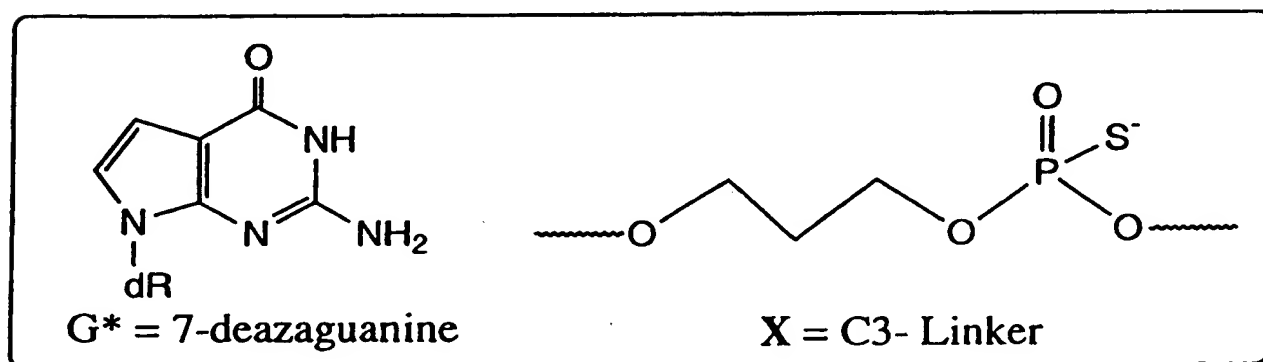


FIG. 21B

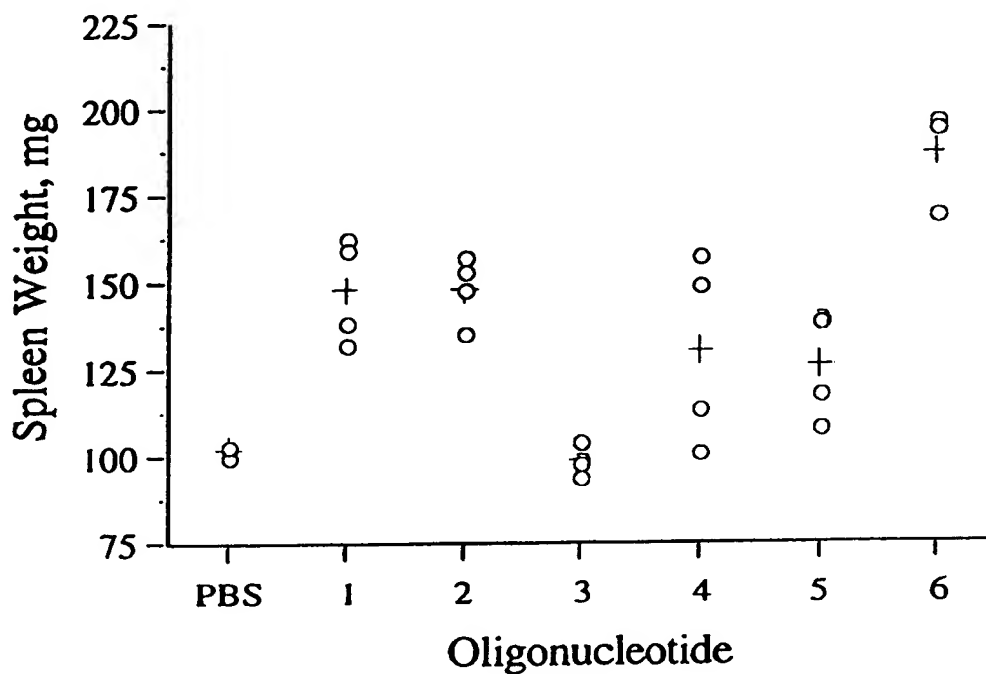


FIG. 21C

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

<i>Oligo No.</i>	<i>Sequence & Modification</i>
SEQ ID NO.: 1	1 5'-CTATCTGACG <u>TT</u> CTCTGT-3' (131-1)
SEQ ID NO.: 101	2 5'-CTATCTGACG <u>TT</u> CTCTGT-3' (E 682)
SEQ ID NO.: 102	3 5'-CTATCTGAG <u>CT</u> TTCTCTGT-3' (E 683)

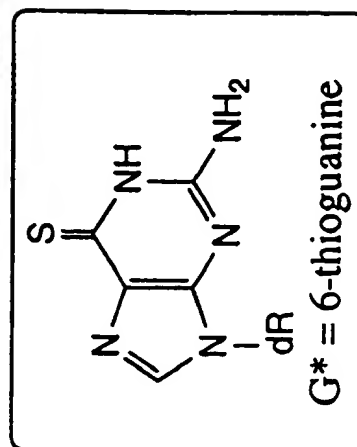


FIG. 22A

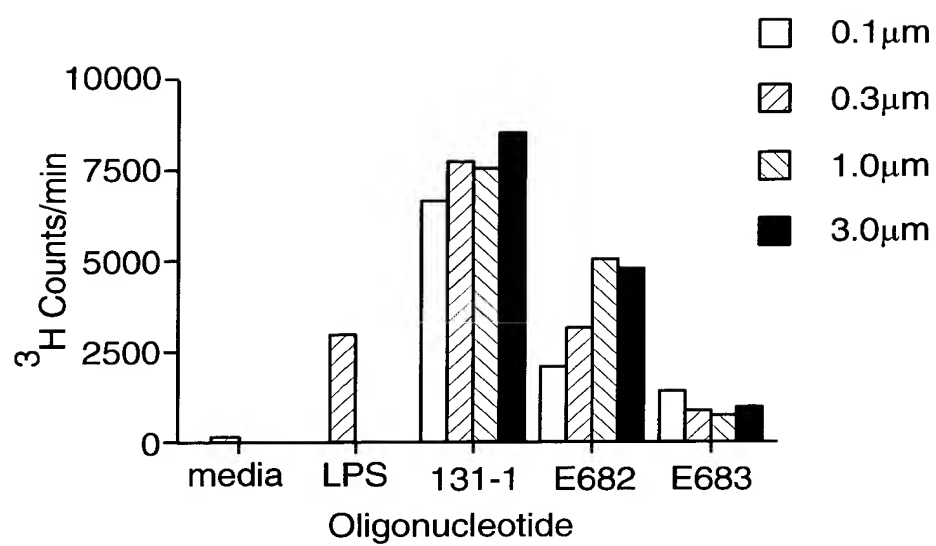


FIG. 22B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

| Seq ID No. | 1 | 2 | 3 | 4 | 5 | |---------------|------------------------------------|------------------------------------|-------------------------------------|-------------------------------------|--------------------------------------| | Seq ID No.: 1 | 5'-CTATCTGAC <u>CG</u> TTCTCTGT-3' | 5'-CTATCTGAC* <u>GTT</u> CTCTGT-3' | 5'-CTATCTGAC <u>CC</u> *TTCTCTGT-3' | 5'-CTATCTGAC** <u>GTT</u> CTCTGT-3' | 5'-CTATCTGAC <u>CC</u> **TTCTCTGT-3' |

SEQ ID NO.: 1 1 5'-CTATCTGACCGTTCTCTGT-3'
 SEQ ID NO.: 2 2 5'-CTATCTGAC*GTTCTCTGT-3'
 SEQ ID NO.: 3 3 5'-CTATCTGACCC*TTCTCTGT-3'
 SEQ ID NO.: 4 4 5'-CTATCTGAC**GTTCTCTGT-3'
 SEQ ID NO.: 5 5 5'-CTATCTGACCC**TTCTCTGT-3'

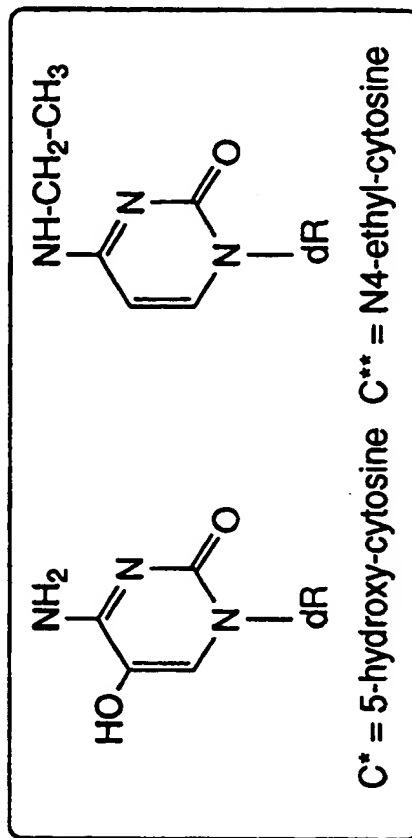


FIG. 23A

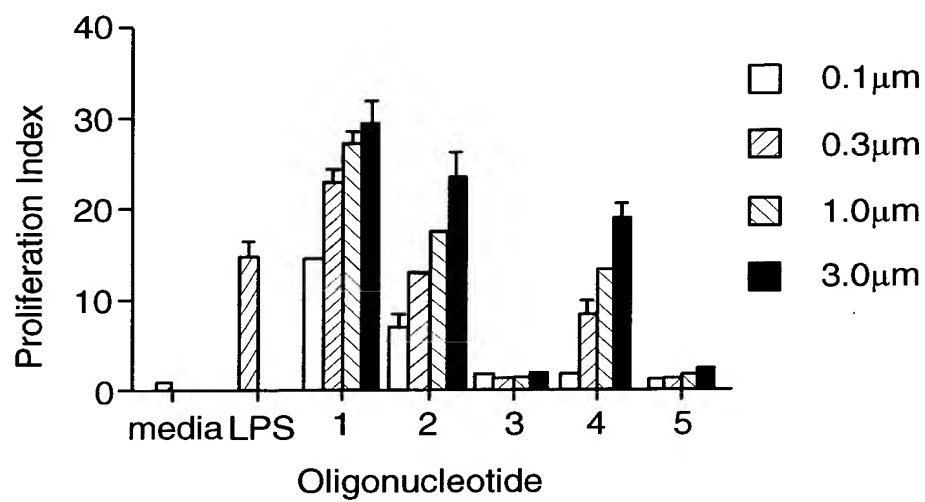


FIG. 23B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

Oligo No. Sequence & Modification

SEQ ID NO.: 1	1	5'-CTATCTGAC <u>GTTC</u> CTGT-3'
SEQ ID NO.: 2	2	5'-CTATCTGAC* <u>GTTC</u> CTGT-3'
SEQ ID NO.: 3	3	5'-CTATCTGAC <u>CC*TT</u> CTCTGT-3'
SEQ ID NO.: 4	4	5'-CTATCTGAC* <u>GTTC</u> CTGT-3'
SEQ ID NO.: 5	5	5'-CTATCTGAC <u>CC**TT</u> CTCTGT-3'

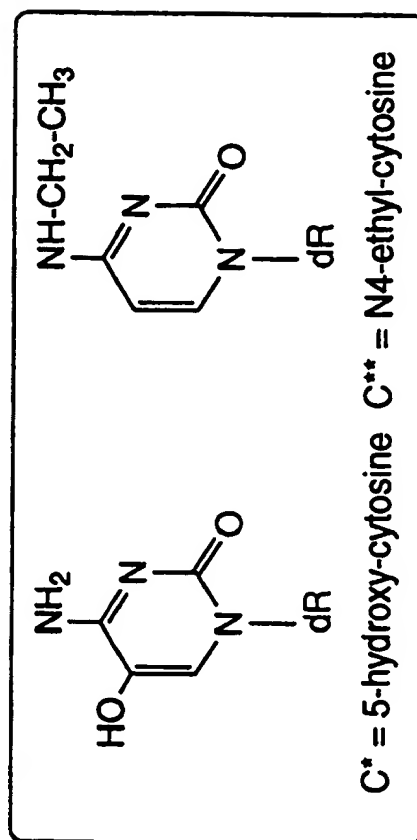


FIG. 24A

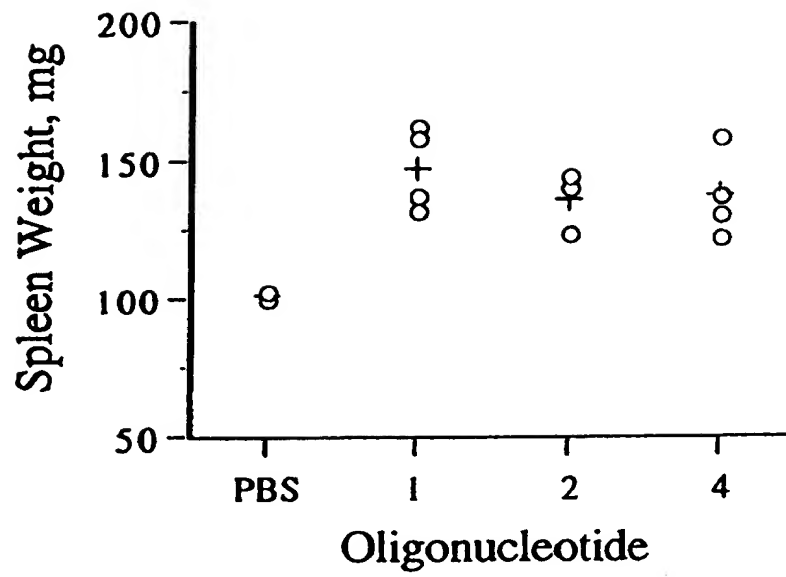


FIG. 24B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

<i>Oligo No.</i>	<i>Sequence & Modification</i>
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SEQ ID NO.: 1	1	5'-CTATCTGAC <u>G</u> TTCTCTGT-3'
---------------	---	-----------------------------------

SEQ ID NO.: 111	2	5'-CTATCTGAC* <u>G</u> TTCTCTGT-3'
-----------------	---	------------------------------------

SEQ ID NO.: 112	3	5'-CTATCTGACC* <u>T</u> TCTCTGT-3'
-----------------	---	------------------------------------

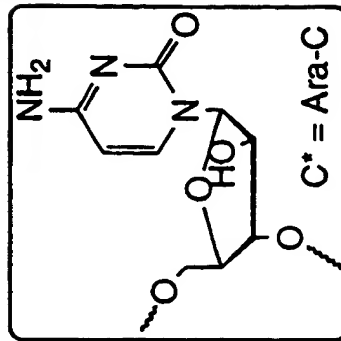


FIG. 25A

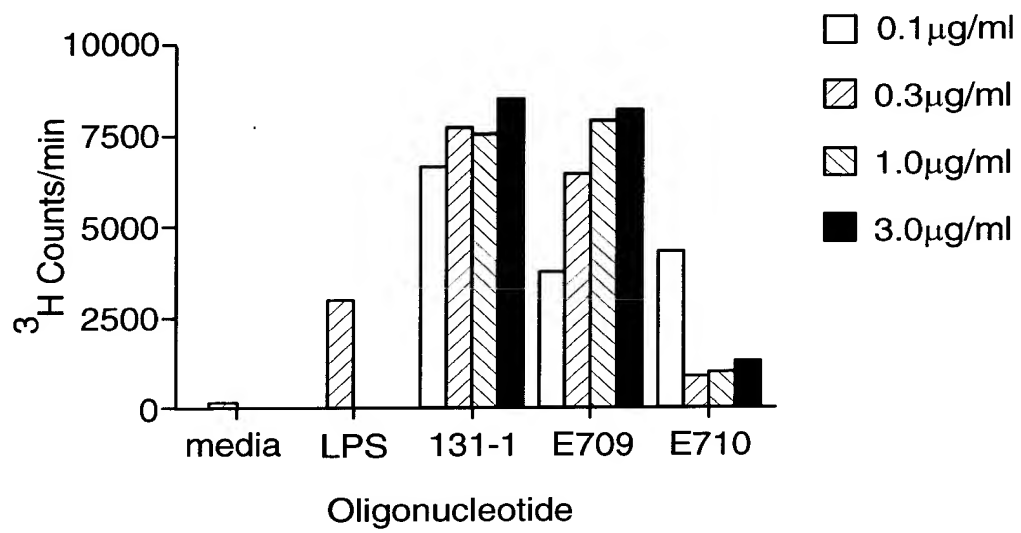


FIG. 25B

OLIGODEOXYNUCLEOTIDE PHOSPHOROTHIOATES AND SITE OF MODIFICATION

Oligo No. Sequence & Modification

SEQ ID NO.:	1	5'-CTATCTGAC <u>CGTTCTCTGT</u> -3' (131-1)
SEQ ID NO.:	2	5'-CTATCTGAC* <u>GTTCTCTGT</u> -3' (E 647)
SEQ ID NO.:	3	5'-CTATX T GAC* <u>GTTCTCTGT</u> -3' (E 653)

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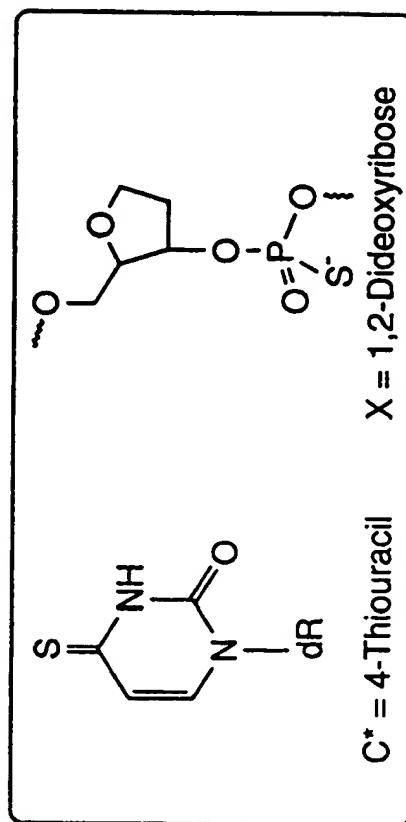


FIG. 26A

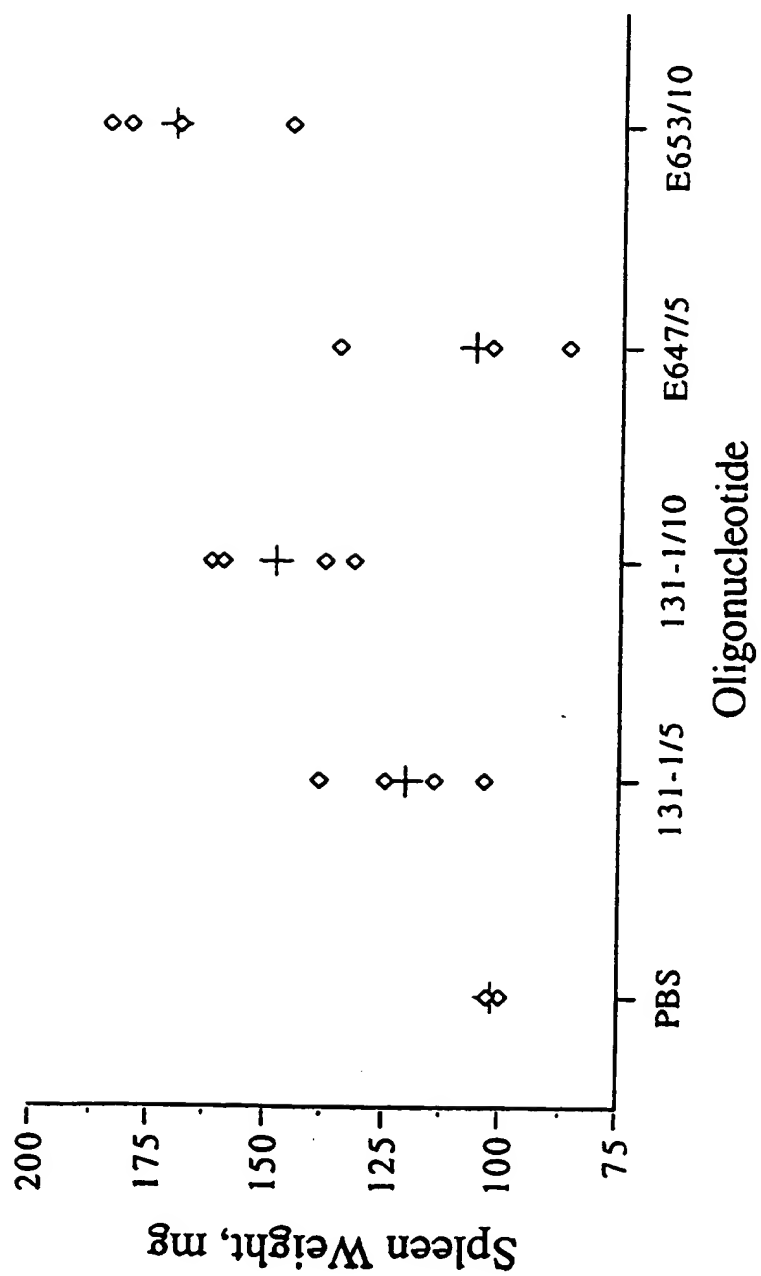


FIG. 26B

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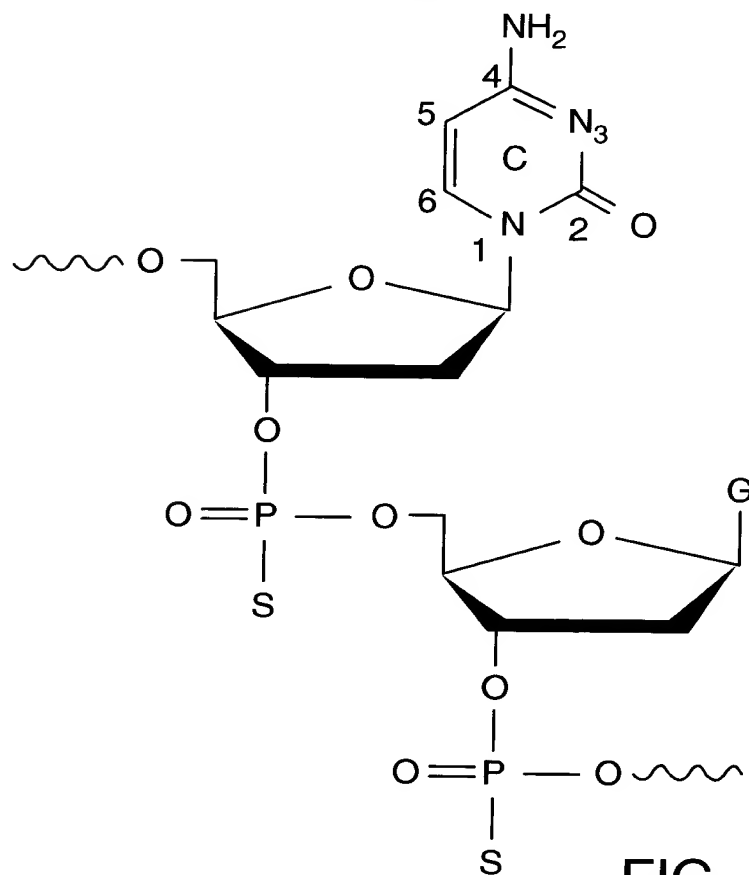


FIG. 27

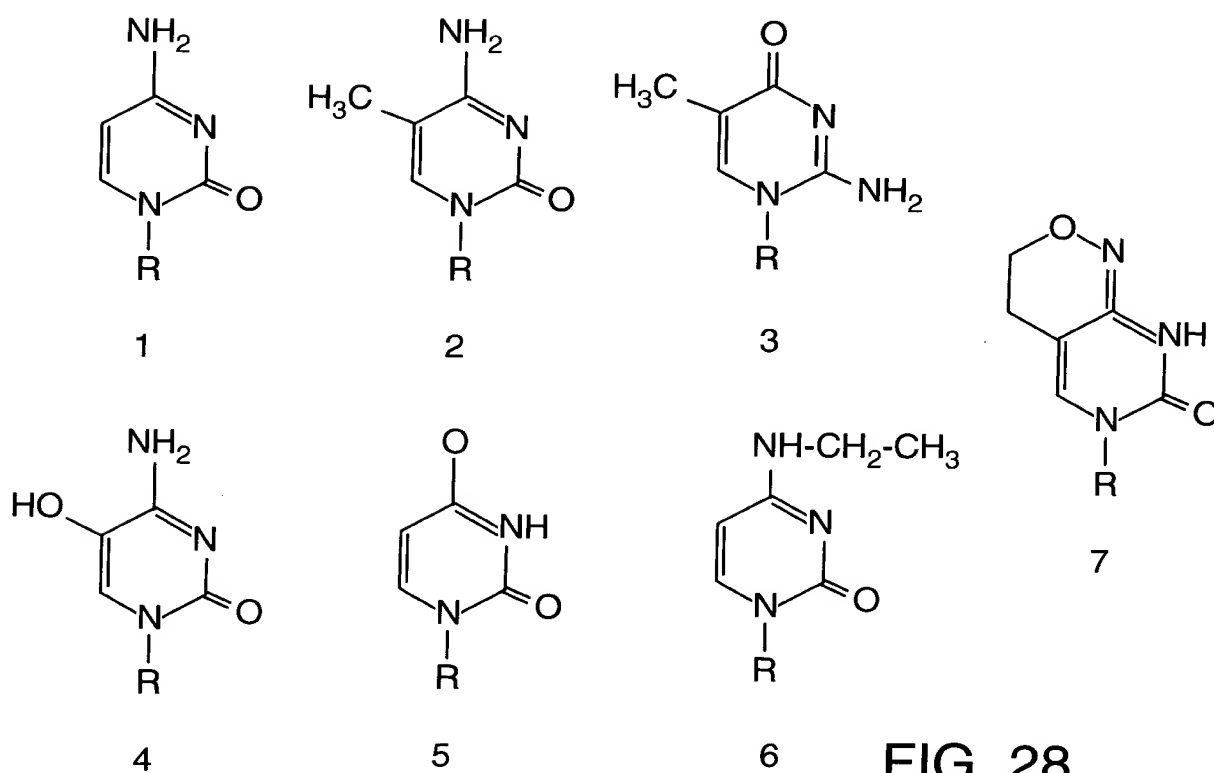


FIG. 28